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L1 1425 IMMUNOGLOBULIN Y OR IGY

=> s l1 and streptococcus mutans  
L2 33 L1 AND STREPTOCOCCUS MUTANS

=> s l2 and type c  
L3 0 L2 AND TYPE C

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L4 ANSWER 1 OF 20 CAPLUS COPYRIGHT 2002 ACS  
2001:459863 Document No. 135:66222 Compositions for treatment of periodontal disease, and device for applying the compositions. Oka, Hironori (Japan). Jpn. Kokai Tokkyo Koho JP 2001172186 A2 20010626, 12 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1999-357002 19991216.  
AB The invention relates to an agent for treatment of periodontal disease contg. deep sea water, super oxidized water, magnetic wave-motion water, alkali ion water, and/or antibody-contg. water, suitable for apply to teeth or gingiva with a specified device. A soln. contg. deep sea water 1.5, egg yolk antibody powder contg. **IgY** against actinobacillus actinomycetecomitans 0.1 g was formulated and applied to patients with periodontal disease.

L4 ANSWER 2 OF 20 CAPLUS COPYRIGHT 2002 ACS  
2002:242626 Document No. 136:231239 Preparation of **IgY** specific to **Streptococcus mutans** serotype c and serotype d for use as anticariogenic agent. Yang, Rongjian (Yachen Pharmaceutical Group (Yuandong) Co., Ltd., Peop. Rep. China). Faming Zhuanli Shenqing Gongkai Shuomingshu CN 1307061 A 20010808, 6 pp. (Chinese). CODEN: CNXXEV.

APPLICATION: CN 2000-101270 20000125.

AB The anticariogenic **IgY** is prepd. by immunizing hens with **Streptococcus mutans** serotype C and D (2:1), collecting and stirring egg yolk in dist. water (5X vol./vol.), adjusting pH to 4.5-6.5, setting at 3-5.degree.C for 20-30 h, centrifuging for 20-30 min to obtain crude **IgY**, and purifying on DEAE-Sephadex A50 chromatog. column and Sephadex G200 gel filtration column with 0.03-0.1M and 0.05-0.2 NaCl-H3PO4 buffer resp. The anticariogenic **IgY** was prepd. as mouthwash, chewing gum, and toothpaste.

L4 ANSWER 3 OF 20 MEDLINE DUPLICATE 1  
2001248116 Document Number: 21189229. PubMed ID: 11292733. Passive

transfer of **immunoglobulin Y** antibody to **Streptococcus mutans** glucan binding protein B can confer protection against experimental dental caries. Smith D J; King W F; Godiska R. (Department of Immunology, The Forsyth Institute, Boston, Massachusetts 02115, USA. ) INFECTION AND IMMUNITY, (2001 May) 69 (5) 3135-42. Journal code: 0246127. ISSN: 0019-9567. Pub. country: United States. Language: English.

AB Active immunization with **Streptococcus mutans** glucan binding protein B (GBP-B) has been shown to induce protection against experimental dental caries. This protection presumably results from continuous secretion of salivary antibody to GBP-B, which inhibits accumulation of *S. mutans* within the oral biofilm. The purpose of this study was to explore the influence of short-term (9- or 24-day) passive oral administration of antibody to *S. mutans* GBP-B on the longer-term accumulation and cariogenicity of *S. mutans* in a rat model of dental caries. Preimmune chicken egg yolk **immunoglobulin Y** (**IgY**) or **IgY** antibody to *S. mutans* GBP-B was supplied in lower (experiment 1) and higher (experiment 2) concentrations in the diet and drinking water of rats for 9 (experiment 1) or 24 (experiment 2) days. During the first 3 days of **IgY** feeding, all animals were challenged with 5 x 10(6) streptomycin-resistant *S. mutans* strain SJ-r organisms. Rats remained infected with *S. mutans* for 78 days, during which rat molars were sampled for the accumulation of *S. mutans* SJ-r bacteria and total streptococci. Geometric mean levels of *S. mutans* SJ-r accumulation on molar surfaces were significantly lower in antibody-treated rats on days 16 and 78 of experiment 2 and were lower on all but the initial (day 5) swabbing occasions in both experiments. Relative to controls, the extent of molar dental caries measured on day 78 was also significantly decreased. The decrease in molar caries correlated with the amount and duration of antibody administration. This is the first demonstration that passive antibody to *S. mutans* GBP-B can have a protective effect against cariogenic *S. mutans* infection and disease. Furthermore, this decrease in infection and disease did not require continuous antibody administration for the duration of the infection period. This study also indicates that antibody to components putatively involved only in cellular aggregation can have a significant effect on the incorporation of *mutans streptococci* in dental biofilm.

L4 ANSWER 4 OF 20 SCISEARCH COPYRIGHT 2002 ISI (R)  
2001:826239 The Genuine Article (R) Number: 480HZ. Isolation of **immunoglobulin** in yolk (**IgY**) and rabbit serum **immunoglobulin G** (**IgG**) specific against bovine lactoferrin by immunoaffinity chromatography . Tu Y Y; Chen C C; Chang H M (Reprint). Natl Taiwan Univ, Grad Inst Food Sci & Technol, Taipei 106, Taiwan (Reprint); Chia Nan Coll Pharm, Dept Food Hlth, Tainan 717, Taiwan. FOOD RESEARCH INTERNATIONAL (OCT 2001) Vol. 34, No. 9, pp. 783-789. Publisher: ELSEVIER SCIENCE BV. PO BOX 211, 1000 AE AMSTERDAM, NETHERLANDS. ISSN: 0963-9969. Pub. country: Taiwan. Language: English.

\*ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS\*

AB Hens were intramuscularly immunized and rabbits were subcutaneously immunized once every two weeks for 6 weeks using bovine lactoferrin (LF)

as antigen. Antibody titers of both yolk (**IgY**) and rabbit serum (**IgG**) were as high as  $1.68 \times 10^8$  at the 6th and 8th weeks, respectively, after the initial immunization treatment. However, antibody titer against LF in yolk was  $9.4 \times 10^7$  at 16 weeks. While antibody titer of rabbit serum declined sharply to  $2.1 \times 10^7$  at the 12th week and to  $2.6 \times 10^6$  at the 13th week after the initial immunization. The purification efficiency (specific activity of purified antibody against LF/specific activity of the corresponding antiserum or yolk against LF) of rabbit serum **IgG** purified by laboratory-prepared LF-Sepharose 4B immunoaffinity column (0.05 mg LF/ml wet gel) was about 2400, similar to that of **IgY** purified by LF-Sepharose 4B immunoaffinity column. Different amounts (0-15.0 mg) of **IgY** purified by LF-Sepharose 4B immunoaffinity chromatography were applied to the same column to determine the binding capacity (q(m)) and dissociation constant (Kd) of LF-Sepharose 4B immunoaffinity gel for **IgY** specific against LF. It was found that q(m) was 0.81 mg **IgY**/ml wet gel (1.620 mg **IgY**/mg LF) and K-d was  $6.4 \times 10^{-6}$  M as determined by Langmuir-type adsorption isotherms. (C) 2001 Elsevier Science Ltd. All rights reserved.

L4 ANSWER 5 OF 20 SCISEARCH COPYRIGHT 2002 ISI (R)

2001:547408 The Genuine Article (R) Number: 448KA. Cloning and expression of a yeast cell wall hydrolase gene (ycl) from alkalophilic *Bacillus alcalophilus* subsp YB380. Ohk S H; Yeo I H; Yu Y J; Kim B K; Bai D H (Reprint). Dankook Univ, Dept Food Engr, Chunan 330714, Chungnam, South Korea (Reprint); Yonsei Univ, Dept Oral Biol, Seoul 120752, South Korea; Pulmuone Co Ltd, R&D Ctr, Seoul 120600, South Korea. JOURNAL OF MICROBIOLOGY AND BIOTECHNOLOGY (JUN 2001) Vol. 11, No. 3, pp. 508-514. Publisher: KOREAN SOC APPLIED MICROBIOLOGY. KOREA SCI TECHNOL CENTER #507, 635-4 YEOGSAM-DONG, KANGNAM-GU, SEOUL 135-703, SOUTH KOREA. ISSN: 1017-7825. Pub. country: South Korea. Language: English.  
\*ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS\*

AB A structural gene (ycl) encoding novel yeast cell wall hydrolase, YCL, was cloned from alkalophilic *Bacillus alcalophilus* subsp. YB380 by PCR and transformed into *E. coli* JM83. Based on the N-terminal and internal amino acid sequences of the enzyme, primers were designed for PCR. The positive clone that harbors 1.8 kb of the yeast cell wall hydrolase gene was selected by the colony hybridization method with a PCR fragment as a probe. According to the computer analysis, this gene contained a 400-base-paired N-terminal domain of the enzyme. Based on nucleotide homology of the cloned gene, a 850 bp fragment was amplified and the C-terminal domain of the enzyme was sequenced. With a combination of the two sequences, a full nucleotide sequence for YCL was obtained. This gene, ycl, consisted of 1,297 nucleotides with 27 amino acids of signal sequence, 83 redundant amino acids of prosequence, and 265 amino acids of the mature protein. This gene was then cloned into the pJH27 shuttle vector and transformed into the *Bacillus subtilis* DB104 to express the enzyme. It was confirmed that the expressed cell wall hydrolase that was produced by *Bacillus subtilis* DB104 was the same as that of the donor strain, by Western blot using polyclonal antibody (**IgY**) prepared from White Leghorn hen. Purified yeast cell wall hydrolase and expressed recombinant protein showed a single band at the same position in the Western blot analysis.

L4 ANSWER 6 OF 20 SCISEARCH COPYRIGHT 2002 ISI (R)

2001:41278 The Genuine Article (R) Number: 388KG. Randomized, placebo-controlled, clinical trial of hyperimmunized chicken egg yolk immunoglobulin in children with rotavirus diarrhea. Sarker S A (Reprint); Casswall T H; Juneja Y R; Hoq E; Hossain I; Fuchs G J; Hammarstrom L. Ctr Hlth & Populat Res, ICDDR, Div Clin Sci, Dhaka 1212, Bangladesh (Reprint); Huddinge Univ Hosp, Karolinska Inst, Dept Immunol Microbiol Pathol & Infect Dis, Stockholm, Sweden; Huddinge Univ Hosp, Karolinska Inst, Dept Clin Sci, Div Pediat, Stockholm, Sweden; Taiyo Kagaku Co Ltd, Nutr Foods Div, Yokkaichi, Japan. JOURNAL OF PEDIATRIC GASTROENTEROLOGY

AND NUTRITION (JAN 2001) Vol. 32, No. 1, pp. 19-25. Publisher: LIPPINCOTT WILLIAMS & WILKINS. 530 WALNUT ST, PHILADELPHIA, PA 19106-3621 USA. ISSN: 0277-2116. Pub. country: Bangladesh; Sweden; Japan. Language: English.  
\*ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS\*

AB Background: Hyperimmunized bovine colostrum containing antibodies has been shown to be effective in the treatment of rotavirus diarrhea. Antibodies derived from eggs of immunized hens may be a less expensive and more practical alternative. In this study, children with proven rotavirus diarrhea were treated with immunoglobulin extracted from eggs of chicken immunized with human rotavirus strains.

Methods: In a randomized, double-blind study, 79 children with known rotavirus diarrhea were assigned to receive either 10 g hyperimmune egg yolk (HEY) daily in four equally divided doses for 4 days (HEY group) or a similar preparation obtained from nonimmunized chicken (placebo group). The daily stool frequency and amount, oral rehydration solution (ORS) intake, and presence of rotavirus in the stool were monitored for 4 days.

Results: In the HEY-treated group, there was significant reduction in stool output (in grams per kilogram per day; HEY vs. placebo; 87 +/- 59 vs. 120 +/- 75,  $P = 0.03$ ), and significant reduction of ORS intake (in milliliters per kilogram per day) (HEY vs. placebo; 84 +/- 46 vs. 122 +/- 72,  $P = 0.008$ ) on day 1 and clearance of virus on day 4 (HEY vs. placebo; 73% vs. 36%,  $P = 0.02$ ). There was, however, no difference in diarrheal duration between the groups.

Conclusions: Treatment with HEY against four human rotavirus strains resulted in modest improvement of diarrhea associated with earlier clearance of rotavirus from stools. These results indicate an encouraging role of HEY in the treatment of rotavirus-induced diarrhea in children. Further studies are needed to optimize the dose and neutralization titer and thus improve the efficacy of egg yolk immunoglobulin **IgY** derived from immunized hens.

L4 ANSWER 7 OF 20 SCISEARCH COPYRIGHT 2002 ISI (R)  
2000:163713 The Genuine Article (R) Number: 277MH. Passive immunization with **IgY** antibody to GBP-B interferes with **Streptococcus mutans** infection in rats.. King W F (Reprint); Godiska R; Smith D J; Taubman M A. FORSYTH INST, BOSTON, MA; OPHIDIAN PHARMACEUT, MADISON, WI. JOURNAL OF DENTAL RESEARCH (15 FEB 2000) Vol. 79, Sp. iss. SI, pp. 1317-1317. Publisher: AMER ASSOC DENTAL RESEARCH. 1619 DUKE ST, ALEXANDRIA, VA 22314. ISSN: 0022-0345. Pub. country: USA. Language: English.

L4 ANSWER 8 OF 20 CAPLUS COPYRIGHT 2002 ACS  
2000:111300 Document No. 133:57336 The influence of egg-yolk immunoglobulin on adherence of **Streptococcus mutans**. Okumura, Noriko (Dep. Prevent. Community Dent., Osaka Dent. Univ., Japan). Koku Eisei Gakkai Zasshi, 50(1), 89-97 (Japanese) 2000. CODEN: KEGZA7. ISSN: 0023-2831. Publisher: Nippon Koku Eisei Gakkai.

AB The purpose of this study is to evaluate the influence of passive immunization with egg-yolk Ig (**IgY**) on inhibition of streptococcal adherence. In the 1st expt. for the influence of **IgY** on initial attachment of mutans streptococci to hydroxyapatite beads (HAp, 0.3-0.6 mm), the amts. of bacteria were measured by spectrophotometer in four kinds of solns.: solns. of specific **IgY** to S. mutants MT 8148, specific **IgY** to S. sobrinus 6715, nonspecific **IgY**, and without **IgY**. In the 2nd expt. for the influence of **IgY** on sucrose-dependent adherence of mutans streptococci to silver wire (diam. 0.8 mm), the amts. of bacteria were measured by spectrophotometer under the condition of sucrose-contained culture in various **IgY** solns. Specific **IgY** to S. mutans MT 8148 prevented the initial attachment of mutans streptococci, which had similar immunity characteristics to S. mutans MT 8148. Specific **IgY** to S. sobrinus 6715 did not inhibit initial attachment of mutans streptococci, but inhibited

sucrose-dependent adherence of mutans streptococci. Specific **IgY** to *S. sobrinus* 6715 did not bind to the serotype-specific antigen on the surface of mutans streptococci, but did to the insol. glucan surrounding the cell surface of mutans streptococci. These results suggested the possibilities of preventing dental plaque accumulation by **IgY**.

L4 ANSWER 9 OF 20 SCISEARCH COPYRIGHT 2002 ISI (R)

2000:300403 The Genuine Article (R) Number: 303ZH. Peroral immunotherapy with yolk antibodies for the prevention and treatment of enteric infections. Carlander D; Kollberg H; Wejaker P E; Larsson A (Reprint). UNIV UPPSALA HOSP, DEPT MED SCI, S-75185 UPPSALA, SWEDEN (Reprint); UNIV UPPSALA HOSP, DEPT MED SCI, S-75185 UPPSALA, SWEDEN; CHILDRENS UNIV HOSP, DEPT PEDIAT, S-75185 UPPSALA, SWEDEN. IMMUNOLOGIC RESEARCH (APR 2000) Vol. 21, No. 1, pp. 1-6. Publisher: HUMANA PRESS INC. 999 RIVERVIEW DRIVE SUITE 208, TOTOWA, NJ 07512. ISSN: 0257-277X. Pub. country: SWEDEN. Language: English.

\*ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS\*

AB Oral administration of specific antibodies is an attractive approach to establish protective immunity against gastrointestinal pathogens in humans and animals. The increasing number of antibiotic-resistant bacteria emphasize the need to find alternatives to antibiotics. Immunotherapy can also be used against pathogens that are difficult to treat with traditional antibiotics.

Laying hens are very good producers of specific antibodies. After immunization, the specific antibodies are transported to the egg yolk from which the antibodies then can be purified. A laying hen produces more than 20 g of yolk antibodies (**IgY**) per year. These antibodies also have biochemical properties that make them attractive for peroral immunotherapy: They neither activate mammalian complement nor interact with mammalian Fc receptors that could mediate inflammatory response in the gastrointestinal tract. Eggs are also normal dietary components and thus there is practically no risk of toxic side effects of **IgY**. Yolk antibodies have been shown in several studies to prevent bacterial and viral infections.

L4 ANSWER 10 OF 20 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.DUPLICATE 2

2000:32891 Document No.: PREV200000032891. The effect of age of hens and vaccination on anti-**Streptococcus mutans** specific **IgY** level in eggs. Rho, J. H. (1); Kim, Y. B.; Han, C. K.; Lee, N. H.; Sung, K. S.; Shon, D. H.. (1) Korea Food Research Institute, Pundang, BaekHyun-Dong 46-1, SungNam, 463-420 South Korea. Korean Journal of Animal Science, (Oct., 1999) Vol. 41, No. 5, pp. 563-574. ISSN: 0367-5807. Language: Korean. Summary Language: English; Korean.

AB **Streptococcus mutans**-specific **IgY** content change, laying rate, egg weight and weight change were measured for 17-week and 30-week old hens. Vaccinations with **Streptococcus mutans** were made two times(eight week interval), three times(four week interval) and five times(two week interval), respectively. It was observed that the laying rate of vaccinated hens was likely lower than that of non-vaccinated group. No effect on body weight by vaccination was found out. Egg weight did not show a certain tendency by vaccination. Anti-*S. mutans* **IgY** started to be detected two weeks after the 1st vaccination for 30-week old hens. It was not detected for non-vaccinated group. The antibody activity was consistently detected after 8 weeks from the last vaccination. The measurement of total **IgY** and *S. mutans*-specific **IgY** in the eggs from vaccinated hens revealed that **IgY** tended to increase with the number of vaccination. *S. mutans*-specific **IgY** content of five-time vaccinated 17-week hens was much higher than that of 30-week old hens. To obtain steady amount of specific **IgY**, multiple vaccination with two week interval was recommended.

L4 ANSWER 11 OF 20 MEDLINE DUPLICATE 3  
2000396936 Document Number: 20031733. PubMed ID: 10563850. Productivity and some properties of immunoglobulin specific against **Streptococcus mutans** serotype c in chicken egg yolk (IgY). Chang H M; Ou-Yang R F; Chen Y T; Chen C C. (Graduate Institute of Food Science and Technology, National Taiwan University, Taipei 106, Taiwan. ) JOURNAL OF AGRICULTURAL AND FOOD CHEMISTRY, (1999 Jan) 47 (1) 61-6. Journal code: 0374755. ISSN: 0021-8561. Pub. country: United States. Language: English.

AB Hens were immunized on thighs by using whole cells of **Streptococcus mutans** MT8148 serotype c strain as antigen through intramuscular (im) and subcutaneous (sc) routes to investigate the difference of immunization reactions and the changes in yolk antibody activities against antigen after initial immunization. Several properties of crude IgY were examined to evaluate the stability during food processing. Results showed that the specificity of IgY of im treated hens was nearly 10 times as high as those of sc treated antibody. IgY from the hens immunized with the serotype c strain showed significant cross-reactions against serotypes e and f, while minor reactions against serotypes a, b, d, and g were observed. In thermal stability tests, IgY activity in both yolk and crude IgY decreased with the increasing temperature, from 70 to 80 degrees C, but the thermal denaturation rates between those two samples were not significantly different. The addition of high levels sucrose, maltose, glycerol, or 2% glycine displayed effective protection against thermal denaturation of IgY. Lyophilized yolk-5% gum arabic powder showed better stability against proteases.

L4 ANSWER 12 OF 20 CAPLUS COPYRIGHT 2002 ACS  
1998:256225 Document No. 128:320910 Dentifrices and food additives showing anticaries activities, etc., containing anti-**Streptococcus mutans** antibodies, etc.. Sunahori, Shinichi; Okabe, Keiichiro (Advance K. K., Japan). Jpn. Kokai Tokkyo Koho JP 10108648 A2 19980428 Heisei, 7 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1996-279869 19961002.

AB Dentifrices and food additives showing anticaries, anti-periodontal disease, and hair-growing effects contain .gtoreq.2 selected from anti-**Streptococcus mutans** antibodies, plant leaf polyphenols, and 5'-deoxy-5'-methylthioadenosine (vitamin L2; I), vehicles which impart thickness and are held in oral cavity, and optional vitamins, intestinal bacteria exts., Ca powders, etc. A mixt. of I, SunGY SMB (IgY to anti-S.), and Sunphenone (polyphenol) significantly inhibited dental plaque formation in dogs. A freeze-dried compn. contg. sol. starch, Na polyacrylate, Na alginate, I, intestinal bacteria ext., freeze-dried powder of intestinal bacteria culture, vitamin mixt., Ca gluconate, Ca, green tea polyphenol, yolk anti-S. mutans antibodies, and corn starch was formulated.

L4 ANSWER 13 OF 20 MEDLINE DUPLICATE 4  
97341640 Document Number: 97341640. PubMed ID: 9197932. Passive immunization against dental plaque formation in humans: effect of a mouth rinse containing egg yolk antibodies (IgY) specific to **Streptococcus mutans**. Hatta H; Tsuda K; Ozeki M; Kim M; Yamamoto T; Otake S; Hirasawa M; Katz J; Childers N K; Michalek S M. (Taiyo Kagaku Co., Ltd., Central Research Laboratories, Mie, Japan. ) CARIES RESEARCH, (1997) 31 (4) 268-74. Journal code: 0103374. ISSN: 0008-6568. Pub. country: Switzerland. Language: English.

AB Passive immunization involving the delivery of antibodies specific to pathogens of infectious diseases to the host has been an attractive approach to establish protective immunity against a variety of microbial pathogens, including **Streptococcus mutans**, which is the principal etiologic agent of dental caries in humans. The overall purpose of the present study was to determine the effectiveness of a mouth

rinse containing antibodies to *S. mutans* in preventing the establishment of this bacterium in dental plaque of humans. The antibodies were derived from egg yolks obtained from hens immunized with whole cells of *S. mutans* grown in sucrose-containing medium. The immunoglobulin derived from the yolks (**IgY**) of immunized hens was characterized in vitro and in vivo in human volunteers. Cross-reactivity tests showed that immune **IgY** reacted with every serotype, except serotype b, which had lost its GTase activity, when the bacteria were cultured in sucrose-containing medium. Immune **IgY** inhibited *S. mutans* adherence to saliva-coated hydroxyapatite discs by 59.2%, while control **IgY** caused an inhibition of only 8.2%. In the short-term (4-hour) test using a mouth rinse containing 10% sucrose, immune **IgY** decreased the ratio of the percentage of *S. mutans* per total streptococci in saliva. In the long-term (7-day) test using a mouth rinse without sucrose, the ratio in saliva was not significantly reduced in the volunteers using the immune **IgY** due to the large standard deviation. However, comparing the ratios of the percentage of *S. mutans* per total streptococci in plaque of individual subjects, there was a tendency for a reduction of the ratios in the volunteers receiving the mouth rinse containing immune **IgY**. These results support the effectiveness of **IgY** with specificity to *S. mutans* grown in the presence of sucrose as an efficient method to control the colonization of *mutans* streptococci in the oral cavity of humans.

L4 ANSWER 14 OF 20 SCISEARCH COPYRIGHT 2002 ISI (R)  
 95:305613 The Genuine Article (R) Number: QT081. EFFECT OF **IgY** ORAL RINSE ON **STREPTOCOCCUS-MUTANS** IN SALIVA. AOKI T (Reprint); TAGUCHI T; KATOH K; HATTA H; KIM M; MAKIMURA M; HIRASAWA M; OTAKE S. NIHON UNIV, SCH DENT, MATSUDO, CHIBA 271, JAPAN. JOURNAL OF DENTAL RESEARCH (1995) Vol. 74, Sp. iss. SI, pp. 501. ISSN: 0022-0345. Pub. country: JAPAN. Language: ENGLISH.

L4 ANSWER 15 OF 20 CAPLUS COPYRIGHT 2002 ACS  
 1995:470444 Document No. 122:262959 Egg antibodies and prevention of infection by oral passive immunization. Ozeki, Makoto; Hatta, Hajime; Kim, Mujo (Cent. Res. Lab., Taiyo Kagaku Co., Ltd., Yokkaichi, 510, Japan). Kagaku (Kyoto, Japan), 50(4), 230-5 (Japanese) 1995. CODEN: KAKYAU. ISSN: 0451-1964.

AB A review with 15 refs., on the prepn. of egg yolk antibodies, **IgY**, and prevention of **Streptococcus mutans** and human rotavirus infections by oral passive immunization using **IgY**.

L4 ANSWER 16 OF 20 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.  
 1994:32750 Document No.: PREV199497045750. Application of **IgY** for protection against oral disease and gastrointestinal infection. Otake, Shigeo (1); Hirasawa, Masatomo; Tsuda, Ken. (1) Dep. Clinical Pathol. Microbiol., Nihon Univ. Sch. Dent. Matsudo, Chiba 271 Japan. Nippon Nogeikagaku Kaishi, (1993) Vol. 67, No. 10, pp. 1437-1439. ISSN: 0002-1407. Language: Japanese.

L4 ANSWER 17 OF 20 CAPLUS COPYRIGHT 2002 ACS  
 1993:601323 Document No. 119:201323 IgG antibody from hen egg yolks: Purification by ethanol fractionation. Horikoshi, Toshio; Hiraoka, Junichiro; Saito, Mariko; Hamada, Shigeyuki (Cosmet. Lab., Kanebo Ltd., Odawara, 250, Japan). Journal of Food Science, 58(4), 739-42, 779 (English) 1993. CODEN: JFDSA2. ISSN: 0022-1147.

AB A procedure was developed for large-scale prepn. of IgG antibodies from egg yolks. The supernatant from egg yolks was obtained after an initial 9-fold diln. with water. The lipids in the supernatant were then almost completely eliminated from the water-sol. protein fraction contg. the antibody, by pptn. with 60% ethanol and filtration. Yolk antibody was purified from the lipid-free water-sol. protein fraction by ethanol fractionation at final concn. 30% (pH unadjusted), and again at 25% (pH

7.4). The purified fraction was composed of >99% pure IgG. Recovery of antibody was calcd. as 40%.

L4 ANSWER 18 OF 20 CAPLUS COPYRIGHT 2002 ACS

1992:254461 Document No. 116:254461 Egg containing antibody to **Streptococcus mutans** as prophylactics for dental caries. Hatta, Hajime; Kanetake, Masa; Otake, Shigeo (Taiyo Kagaku K. K., Japan). Jpn. Kokai Tokkyo Koho JP 04071465 A2 19920306 Heisei, 14 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1990-182944 19900710.

AB Chicken antibody to **Streptococcus mutans** is prepd. and the egg yolk contg. the antibody is used for prepg. food or beverage as prophylactics for dental caries. Immunization of chicken with *S. mutans*, detn. the antibody in the egg yolk (**IgY**), and manuf. of a variety of food such as chocolate contg. **IgY** were demonstrated. A 2-mo study on rats showed that the chocolate contg. 0.1% **IgY** reduced the caries by approx. 40%.

L4 ANSWER 19 OF 20 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.

1992:401201 Document No.: BR43:57076. ANTICARIES EFFECT OF TEA CATECHINS AND ANTI-**STREPTOCOCCUS-MUTANS IgY**. TAGUCHI T; HIRASAWA M; ASAKA H; HONDA M; NIIHO K; OTAKE S. NIHON UNIV. SCH. DENT. MATSUDO, JPN.. JOINT MEETING OF THE 70TH GENERAL MEETING OF THE INTERNATIONAL ASSOCIATION FOR DENTAL RESEARCH (IADR), 40TH ANNUAL MEETING OF THE BRITISH DIVISION OF THE IADR, 1992 ANNUAL MEETING OF THE CONTINENTAL EUROPEAN DIVISION OF THE IADR, 8TH ANNUAL MEETING OF THE IRISH DIVISION OF THE IADR, AND THE 75TH ANNUAL MEETING OF THE SCANDINAVIAN ASSOCIATION FOR DENTAL RESEARCH, GLASGOW, SCOTLAND, UK, JULY 1-4, 1992. J DENT RES. (1992) 71 (SPEC ISSUE), 650. CODEN: JDREAF. ISSN: 0022-0345. Language: English.

L4 ANSWER 20 OF 20 MEDLINE

DUPLICATE 5

91154516 Document Number: 91154516. PubMed ID: 1825668. Protection of rats against dental caries by passive immunization with hen-egg-yolk antibody (**IgY**). Otake S; Nishihara Y; Makimura M; Hatta H; Kim M; Yamamoto T; Hirasawa M. (Department of Clinical Pathology, Nihon University School of Dentistry, Chiba, Japan. ) JOURNAL OF DENTAL RESEARCH, (1991 Mar) 70 (3) 162-6. Journal code: 0354343. ISSN: 0022-0345. Pub. country: United States. Language: English.

AB Hen-egg-yolk antibody (**IgY**) was prepared against **Streptococcus mutans** MT8148 serotype c that was cultivated in medium containing sucrose, and it was used in passive caries-immunity studies. Specific pathogen-free rats infected with *S. mutans* MT8148 (c) and fed with a cariogenic diet containing more than 2% immune yolk powder developed significantly lower caries scores than did the ones infected with the same strain and fed with a diet containing only control yolk powder obtained from non-immunized hens. Similar results were obtained in an experiment with rats infected with *S. mutans* JC-2 (c) strain. Rats provided a diet supplemented with 0.5% immune water-soluble protein fraction containing *S. mutans*-specific **IgY** and challenged with *S. mutans* MT8148 exhibited significantly fewer caries lesions, compared with control rats on the normal diet.

=> s streptococcus mutans

L5 22587 STREPTOCOCCUS MUTANS

=> s 15 and dental caries

L6 4868 L5 AND DENTAL CARIES

=> s 16 and type c

L7 13 L6 AND TYPE C

=> s 17 and type d

L8 4 L7 AND TYPE D

=> s 18 and 2:1 ratio

L9 0 L8 AND 2:1 RATIO

=> dup remove 17

PROCESSING COMPLETED FOR L7

L10 13 DUP REMOVE L7 (0 DUPLICATES REMOVED)

=> d 110 1-13 cbib abs

L10 ANSWER 1 OF 13 CAPLUS COPYRIGHT 2002 ACS

2002:157600 Document No. 136:215408 Immunological prevention of

**dental caries**. Shi, Wenyuan; Anderson, Maxwell H.

(Washington Dental Service, USA; Regents of the University of California).

PCT Int. Appl. WO 2002015931 A1 20020228, 20 pp. DESIGNATED STATES: W:

AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW; RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE. (English). CODEN: PIXXD2. APPLICATION: WO 2000-US23277 20000824.

AB The authors disclose that **dental caries** may be prevented or treated by oral ingestion of human or humanized mouse monoclonal IgG and IgM antibodies that bind to surface antigens of cariogenic organisms, such as **Streptococcus mutans**. In one example, monoclonal antibodies to **type c** S. mutans were produced in Arabidopsis thaliana by Agrobacterium tumefaciens transfection of heavy and light chains and cross-breeding of the transformed plants. The antibodies are applied by eating the plants.

L10 ANSWER 2 OF 13 CAPLUS COPYRIGHT 2002 ACS

1994:7322 Document No. 120:7322 Foods for preventing **dental**

**caries**. Oota, Masakatsu; Horikoshi, Toshio; Hiraoka, Junichiro;

Irie, Yoichi (Kanebo Ltd, Japan). Jpn. Kokai Tokkyo Koho JP 05227916 A2

19930907 Heisei, 5 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1992-22138 19920111.

AB A food compn. for preventing **dental caries** comprises (1) Ig prepd. from eggs of the chickens immunized with **Streptococcus mutans type c**, e, or f and (2) ext. of the Persimmon leaves and/or the Hovenia dulcis fruits. Anti-glucosyltransferase antibodies, 95% EtOH-ext. of the Persimmon leaves and the Hovenia dulcis fruits, and the compns. contg. them were prepd. and used in manufg. ice creams, chocolates, and chewing gums. The anti-caries effects of the food products were also demonstrated.

L10 ANSWER 3 OF 13 CAPLUS COPYRIGHT 2002 ACS

1993:45725 Document No. 118:45725 Manufacture of antibody to

**Streptococcus mutans** for **dental caries**

control. Fukami, Sunao; Shimizu, Mikio; Sato, Shizuo (National Federation of Agricultural Co-Operative Assoc., Japan). Jpn. Kokai Tokkyo Koho JP 04273828 A2 19920930 Heisei, 8 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1991-117065 19910227.

AB Serum **type-C** S. mutans is cultured in BHI medium and the supernatant is used as antigen for injection into mice to produce an antibody useful for **dental caries** control. Alternatively, the antibody is manufd. by injection of antigen into chicken and isolation of the antibody from egg yolks. S. mutans is responsible for **dental caries**.

L10 ANSWER 4 OF 13 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.

1992:205597 Document No.: BR42:98672. **STREPTOCOCCUS-MUTANS**

CARBOHYDRATE PROTEIN CONJUGATES FOR IMMUNIZATION STUDIES. CHILDERS N K; ZHANG S; MILLER E; RUSSELL M W; MICHALEK S M. UNIV. ALA., SCH. DENT., DEP. MICROBIOL., BIRMINGHAM, ALA.. 21ST ANNUAL MEETING OF THE AMERICAN ASSOCIATION FOR DENTAL RESEARCH, BOSTON, MASSACHUSETTS, USA, MARCH 11-14, 1992. J DENT RES. (1992) 71 (SPEC ISSUE MAR ), 218. CODEN: JDREAF. ISSN: 0022-0345. Language: English.

L10 ANSWER 5 OF 13 EMBASE COPYRIGHT 2002 ELSEVIER SCI. B.V.

90028021 EMBASE Document No.: 1990028021. Screening of Taiwanese crude drugs for antibacterial activity against **Streptococcus mutans**. Chen C.-P.; Lin C.-C.; Namba T.. School of Pharmacy, Kaohsiung Medical College, Taiwan, Taiwan, Province of China. Journal of Ethnopharmacology 27/3 (285-295) 1989. ISSN: 0378-8741. CODEN: JOETD7. Pub. Country: Ireland. Language: English. Summary Language: English.

AB Preliminary antibacterial screening of local crude drugs was carried out using the cariogenic bacterium, **Streptococcus mutans**. Of 79 aqueous extracts tested, 6 crude drugs were shown to have significant antibacterial activity with minimal inhibitory concentration equal to or lower than 7.8 mg/ml (expressed in terms of dry starting material). Of these effective crude drugs, *Morus australis*, *Ludwigia octovalvis* and *Thuja orientalis* were very effective in inhibiting the growth of serotypes c and d of *S. mutans* (MIC .ltoreq. 2.0-7.8 mg/ml). *Elephantopus scaber*, *Artemisia vulgaris*, *Mosla chinensis* and *Orthosiphon aristatus* also exhibited considerable antibacterial activity (MIC = 7.8-23.4 mg/ml) against both serotypes. In the presence of 5% sucrose, the antibacterial potency of the majority of the extracts did not change for **type c**, while the potency decreased about one-half for **type d**.

L10 ANSWER 6 OF 13 MEDLINE

80182627 Document Number: 80182627. PubMed ID: 7372795. Isolation and serotyping of **Streptococcus mutans** from teeth and feces of children. Hamada S; Masuda N; Kotani S. JOURNAL OF CLINICAL MICROBIOLOGY, (1980 Apr) 11 (4) 314-8. Journal code: 7505564. ISSN: 0095-1137. Pub. country: United States. Language: English.

AB **Streptococcus mutans** were detected in the feces from 10 of 29 caries-active patients, aged 4 to 9 years. The percentage of *S. mutans* to the total counts of facultatively anaerobic streptococci on mitis salivarius agar (Difco Laboratories) varied from 0 to 72.5%. *S. mutans* were then isolated from dental plaque of sound teeth and carious dentin of the 10 subjects known to harbor *S. mutans* in the feces. The frequency distribution of various serotypes of these dental and fecal isolates of *S. mutans* was compared by the immunodiffusion technique. Of the total 1,047 isolates (290 isolates from feces, 289 from dental plaque, and 468 from carious dentin), **type c** isolates were most prevalent (ca. 66%). Serotype d, e, f, and g isolates were also found but in far lower frequencies. Plural serotypes of *S. mutans* were occasionally found in dental and fecal samples of a single subject. For two subjects, relatively rare serotypes of *S. mutans* in the population examined, serotype e, f, or g, were predominantly found in their fecal and dental samples and those of their siblings and mother, suggesting an intrafamilial transmission of *S. mutans*.

L10 ANSWER 7 OF 13 MEDLINE

80050375 Document Number: 80050375. PubMed ID: 291630. Differential utilization of proteins in saliva from caries-active and caries-free subjects as growth substrates by plaque-forming streptococci. Cowman R A; Schaefer S J; Fitzgerald R J; Rosner D; Shklair I L; Walter R G. JOURNAL OF DENTAL RESEARCH, (1979 Oct) 58 (10) 2019-27. Journal code: 0354343. ISSN: 0022-0345. Pub. country: United States. Language: English.

AB Mixed or parotid saliva from caries-active individuals consistently supported better growth of **Streptococcus mutans** (

**type c**) than that from caries-free individuals.

Electrophoretic studies revealed that certain proteins in caries-active salivas were susceptible to microbial attack, but similar proteins in caries-free salivas were refractory.

L10 ANSWER 8 OF 13 MEDLINE

79147571 Document Number: 79147571. PubMed ID: 106996. Bacterial and strain specificities in opsonization, phagocytosis and killing of **Streptococcus mutans**. Scully C M; Lehner T. CLINICAL AND EXPERIMENTAL IMMUNOLOGY, (1979 Jan) 35 (1) 128-32. Journal code: 0057202. ISSN: 0009-9104. Pub. country: ENGLAND: United Kingdom. Language: English.

AB Opsonization of **Streptococcus mutans**, followed by phagocytosis and killing by polymorphonuclear leucocytes has been postulated as an effector mechanism in protection against **dental caries**. Opsonization was studied by using sera from monkeys immunized with killed Strep. mutans (sero-**type c**) and compared with sera from sham-immunized monkeys. Antibodies to Strep. mutans (sero-**type c**) induced maximal phagocytosis and killing of serotypes c and e, and this was significantly greater than with serotypes a and d; there was no significant phagocytosis or killing of serotype b. There was little or no opsonization with Actinomyces viscosus, Lactobacillus casei, Strep. sanguis and Strep. salivarius. The exception was Strep. CHT which showed significant phagocytosis and killing. The results suggest that immunization with the serotype c strain of Strep. mutans might offer protection against four of the five common serotypes of this organism.

L10 ANSWER 9 OF 13 MEDLINE

79010150 Document Number: 79010150. PubMed ID: 692465. **Dental caries** induction in experimental animals by clinical strains of **Streptococcus mutans** isolated from Japanese children. Hamada S; Ooshima T; Torii M; Imanishi H; Masuda N; Sobue S; Kotani S. MICROBIOLOGY AND IMMUNOLOGY, (1978) 22 (6) 301-14. Journal code: 7703966. ISSN: 0385-5600. Pub. country: Japan. Language: English.

AB Oral implantation and the cariogenic activity of clinical strains of **Streptococcus mutans** which had been isolated from Japanese children and labeled with streptomycin-resistance were examined in specific pathogen-free Sprague-Dawley rats. All the seven strains tested were easily implanted and persisted during the experimental period. Extensive carious lesions were produced in rats inoculated with clinical strains of S. mutans belonging to serotypes c, d, e, and f, and maintained on caries-inducing diet no. 2000. Noninfected rats did not develop **dental caries** when fed diet no. 2000. Type d S. mutans preferentially induced smooth surface caries in the rats. Strains of other serotypes primarily developed caries of pit and fissure origin. Caries also developed in rats inoculated with reference S. mutans strains BHTR and FAIR (type b) that had been maintained in the laboratories for many years. However, the cariogenicity of the laboratory strains was found to have decreased markedly. All three S. sanguis strains could be implanted, but only one strain induced definite fissure caries. Two S. salivarius strains could not be implanted well in the rats and therefore they were not cariogenic. Four different species of lactobacilli also failed to induce **dental caries** in rats subjected to similar caries test regimen on diet no. 200. S. mutans strain MT6R (**type c**) also induce caries in golden hamsters and ICR mice, but of variable degrees.

L10 ANSWER 10 OF 13 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.

1979:129799 Document No.: BA67:9799. EXTRACELLULAR GLUCANS SYNTHESIZED BY STRAINS OF 2 TYPES OF **STREPTOCOCCUS-MUTANS** IN-VITRO. TRAUTNER K; GEHRING F; LOHMANN D. DEP. EXP. DENT., UNIV. WUERZBURG, PLEICHERWALL 2, D-8700 WUERZBURG, W. GER.. ARCH ORAL BIOL, (1978) 23 (3), 175-182. CODEN: AOBIAR. ISSN: 0003-9969. Language: English.

AB Strains (33) of *S. mutans* were used to synthesize extracellular polysaccharides in vitro. It was established by biochemical methods that 10 of these strains resembled *S. mutans* **type c**, and 23 type d. The extracellular polysaccharides were identified as glucans by acid hydrolysis and enzymic determination of the split products. The type d strains synthesized significantly higher amounts of extracellular polysaccharides per gram bacterial mass than the **type c** strains. The ratio of soluble to insoluble polysaccharides was significantly higher with the **type c** strains. Repeated synthesis of extracellular polysaccharides by 1 strain of each type showed reproducible results. The differences with respect to amounts and types of extracellular polysaccharides might be due to the opposite action of streptococcal glucosyltransferase and glucanhydrolase. [This study relates to **dental caries** formation.]

L10 ANSWER 11 OF 13 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.  
1976:172187 Document No.: BA62:2187. CHARACTERIZATION OF AN ANTI GLUCOSYL TRANSFERASE SERUM SPECIFIC FOR INSOLUBLE GLUCAN SYNTHESIS BY **STREPTOCOCCUS-MUTANS**. LINZER R; SLADE H D. INFECT IMMUN, (1976) 13 (2), 494-500. CODEN: INFIBR. ISSN: 0019-9567. Language: Unavailable.

AB An anti-glucosyltransferase serum [rabbit], which synthesized 96% insoluble glucans, was prepared against a purified enzyme preparation from *S. mutans* strain HS6 (serotype a). This serum was examined for its effects on glucan synthesis by crude enzyme preparations from eight strains (4 serotypes) of *S. mutans* and for the ability of these preparations to promote adherence of *S. mutans* to a smooth surface. Glucosyltransferase activity was assayed by measuring the incorporation of glucose from [14C]glucose-labeled sucrose into water-insoluble and water-soluble (ethanol-insoluble) glucans. Anti-glucosyltransferase serum inhibited insoluble glucan synthesis by crude enzyme preparations from cells of the 4 serotypes of *S. mutans*. Enzymes from strains of types a, b, and d were inhibited between 70-90%; enzymes from **type c** strains were inhibited from 45-60%. The adherence to a glass surface of heat-killed cells from these 4 serotypes was likewise inhibited. Soluble glucan synthesis was not inhibited by the serum, and in some cases its synthesis increased as insoluble glucan synthesis decreased. The importance of this system to immune control of **dental caries** is discussed.

L10 ANSWER 12 OF 13 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.  
1976:207829 Document No.: BA62:37829. BACTERIOCINOGENY AND THE PROPERTIES OF SOME BACTERIOCINS OF **STREPTOCOCCUS-MUTANS**. ROGERS A H. ARCH ORAL BIOL, (1976) 21 (2), 99-104. CODEN: AOBIA. ISSN: 0003-9969. Language: Unavailable.

AB Of 143 strains of *S. mutans* [implicated in the etiology of human **dental caries**] investigated, 98 (70%) were bacteriocinogenic on 1 or more indicator strains. The bacteriocins were active streptococcal, species i.e., *S. pyogenes*, *S. pneumoniae* and enterococci, and against a number of unrelated gram-positive bacteria. The 2 gram-negative strains tested were not attacked. Many strains appeared to produce > 1 type of bacteriocin; the diversity was evidenced by differences in host-range patterns, sensitivity to heat, chloroform and proteolytic enzymes, and ability to diffuse through membranes. Bacteriocins of low and high MW types were produced by various strains of *S. mutans*. On a world-wide basis, strains of serological **type c** are common and predominate among local isolates. The high incidence of bacteriocinogeny among strains of this serotype, and the fact that most other strains produced or were sensitive to *S. mutans* bacteriocins, indicated that a bacteriocin typing scheme might be valuable as an epidemiological tool.

L10 ANSWER 13 OF 13 EMBASE COPYRIGHT 2002 ELSEVIER SCI. B.V.

75060048 EMBASE Document No.: 1975060048. Biochemical and serological properties of **Streptococcus mutans** from various human and animal sources. Perch B.; Kjems E.; Ravn T.. Streptococcal Dept., Statens Seruminst., Copenhagen, Acta Pathologica et Microbiologica Scandinavica - Section B Microbiology and Immunology 82 B/3 (357-370) 1974.

CODEN: APMIBM. Language: English.

- AB The main part of strains of *S. mutans* isolated from the present Danish material of blood from patients with subacute endocarditis and from human teeth belonged to 2 of 5 serotypes established by Bratthall, viz. **type c** and type e. Two new types were established: type f and type g. Strain SL 1 seems to constitute a distinct type. Strains of serotypes a and b have not been isolated in Denmark, and strains of serotypes d, g and SL have been isolated from teeth only. The registered differences in biochemical behavior warrant a proposal of a subdivision into 3 biotypes. Strains of type a and type b were not isolated from blood or teeth and strains of type d and type g were isolated from teeth only. These results are very similar to those reported by de Moor et al. Among strains from blood, these authors found serological group M I )antiserum to NCTC10449 = serotype c) and a nontypeable ( M O) group. Strains of serological group M II (antiserum to strain K 1 which may react with serotypes a, d, or g) were found in teeth only. In contract to the Danish material, the Dutch material contains many nontypeable strains (24.3% in contrast to 4.4%). Strains belonging to **types c**, e and f might occur among the Dutch nontypeable strains. Three of the Dutch M O strains could be typed as type e. This is further supported by the fact that the nontypeable strains have the colonial appearance of group M I ( **type c**) and biochemically they are closely related to that group. The M II strains might belong to type d, but not very likely to type a, since the biochemical data indicate that they behave like the presently proposed biotype 3 strains, all of which belong either to type d or to type g, except strain SL 1 which is supposed to be a distinct serotype. This compares well with the findings that group antigen was found in both preparations of group F streptococci FA 1 mutans.

=> dup remove l8

PROCESSING COMPLETED FOR L8

L11 4 DUP REMOVE L8 (0 DUPLICATES REMOVED)

=> d l11 1-4 cbib abs

L11 ANSWER 1 OF 4 EMBASE COPYRIGHT 2002 ELSEVIER SCI. B.V.

90028021 EMBASE Document No.: 1990028021. Screening of Taiwanese crude drugs for antibacterial activity against **Streptococcus mutans**. Chen C.-P.; Lin C.-C.; Namba T.. School of Pharmacy, Kaohsiung Medical College, Taiwan, Taiwan, Province of China. Journal of Ethnopharmacology 27/3 (285-295) 1989.

ISSN: 0378-8741. CODEN: JOETD7. Pub. Country: Ireland. Language: English. Summary Language: English.

- AB Preliminary antibacterial screening of local crude drugs was carried out using the cariogenic bacterium, **Streptococcus mutans**. Of 79 aqueous extracts tested, 6 crude drugs were shown to have significant antibacterial activity with minimal inhibitory concentration equal to or lower than 7.8 mg/ml (expressed in terms of dry starting material). Of these effective crude drugs, *Morus australis*, *Ludwigia octovalvis* and *Thuja orientalis* were very effective in inhibiting the growth of serotypes c and d of *S. mutans* (MIC .ltoreq. 2.0-7.8 mg/ml). *Elephantopus scaber*, *Artemisia vulgaris*, *Mosla chinensis* and *Orthosiphon aristatus* also exhibited considerable antibacterial activity (MIC = 7.8-23.4 mg/ml) against both serotypes. In the presence of 5% sucrose, the antibacterial potency of the majority of the extracts did not change for **type c**, while the potency decreased about one-half for

type d.

L11 ANSWER 2 OF 4 MEDLINE

79010150 Document Number: 79010150. PubMed ID: 692465. **Dental caries** induction in experimental animals by clinical strains of **Streptococcus mutans** isolated from Japanese children. Hamada S; Ooshima T; Torii M; Imanishi H; Masuda N; Sobue S; Kotani S. MICROBIOLOGY AND IMMUNOLOGY, (1978) 22 (6) 301-14. Journal code: 7703966. ISSN: 0385-5600. Pub. country: Japan. Language: English.

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L11 ANSWER 3 OF 4 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.

1979:129799 Document No.: BA67:9799. EXTRACELLULAR GLUCANS SYNTHESIZED BY STRAINS OF 2 TYPES OF **STREPTOCOCCUS-MUTANS** IN-VITRO. TRAUTNER K; GEHRING F; LOHMANN D. DEP. EXP. DENT., UNIV. WUERZBURG, FLEICHERWALL 2, D-8700 WUERZBURG, W. GER.. ARCH ORAL BIOL, (1978) 23 (3), 175-182. CODEN: AOBIA. ISSN: 0003-9969. Language: English.

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L11 ANSWER 4 OF 4 EMBASE COPYRIGHT 2002 ELSEVIER SCI. B.V.

75060048 EMBASE Document No.: 1975060048. Biochemical and serological properties of **Streptococcus mutans** from various human and animal sources. Perch B.; Kjems E.; Ravn T.. Streptococcal Dept., Statens Seruminst., Copenhagen, Acta Pathologica et Microbiologica Scandinavica - Section B Microbiology and Immunology 82 B/3 (357-370) 1974.

CODEN: APMIBM. Language: English.

AB The main part of strains of *S. mutans* isolated from the present Danish

material of blood from patients with subacute endocarditis and from human teeth belonged to 2 of 5 serotypes established by Bratthall, viz. **type c** and **type e**. Two new types were established: **type f** and **type g**. Strain SL 1 seems to constitute a distinct type. Strains of serotypes a and b have not been isolated in Denmark, and strains of serotypes d, g and SL have been isolated from teeth only. The registered differences in biochemical behavior warrant a proposal of a subdivision into 3 biotypes. Strains of **type a** and **type b** were not isolated from blood or teeth and strains of **type d** and **type g** were isolated from teeth only. These results are very similar to those reported by de Moor et al. Among strains from blood, these authors found serological group M I (antiserum to NCTC10449 = serotype c) and a nontypeable (M O) group. Strains of serological group M II (antiserum to strain K 1 which may react with serotypes a, d, or g) were found in teeth only. In contrast to the Danish material, the Dutch material contains many nontypeable strains (24.3% in contrast to 4.4%). Strains belonging to **types c**, e and f might occur among the Dutch nontypeable strains. Three of the Dutch M O strains could be typed as **type e**. This is further supported by the fact that the nontypeable strains have the colonial appearance of group M I (**type c**) and biochemically they are closely related to that group. The M II strains might belong to **type d**, but not very likely to **type a**, since the biochemical data indicate that they behave like the presently proposed biotype 3 strains, all of which belong either to **type d** or to **type g**, except strain SL 1 which is supposed to be a distinct serotype. This compares well with the findings that group antigen was found in both preparations of group F streptococci FA 1 mutans.

```
=> s streptococcus mutant type c culture
L12      0 STREPTOCOCCUS MUTANT TYPE C CULTURE

=> s streptococcus mutans type c and "BHI"
L13      0 STREPTOCOCCUS MUTANS TYPE C AND "BHI"

=> s streptococcus culture medium
L14      0 STREPTOCOCCUS CULTURE MEDIUM

=> s medium
L15      2074995 MEDIUM

=> s 115 and BHI
L16      800 L15 AND BHI

=> s 116 and strep mutants
L17      0 L16 AND STREP MUTANTS

=> s 116 and mutans
L18      15 L16 AND MUTANS

=> s 118 and strep
L19      0 L18 AND STREP

=> dup remove 118
PROCESSING COMPLETED FOR L18
L20      11 DUP REMOVE L18 (4 DUPLICATES REMOVED)

=> d 120 1-11 cbib abs
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L20  ANSWER 1 OF 11      MEDLINE      DUPLICATE 1
2001436153  Document Number: 21374903.      PubMed ID: 11482716.      Control of
microorganisms in vitro by calcium hydroxide pastes. Estrela C; Bammann L
L; Pimenta F C; Pecora J D. (Department of Endodontics, Federal University
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of Goias, Goiania. ) INTERNATIONAL ENDODONTIC JOURNAL, (2001 Jul) 34 (5) 341-5. Journal code: 8004996. ISSN: 0143-2885. Pub. country: England: United Kingdom. Language: English.

- AB AIM: The aim of this study was to determine the influence of vehicles on the antimicrobial efficiency of calcium hydroxide. METHODOLOGY: A total of 588 size 50 sterile absorbent paper points, were immersed in various microbial suspensions for 3 min. The points were then placed on Petri dishes and covered with intracanal dressings containing calcium hydroxide: Ca(OH)<sub>2</sub> + saline; Ca(OH)<sub>2</sub> + camphorated paramonochlorophenol; Ca(OH)<sub>2</sub> + 1% chlorhexidine solution; Ca(OH)<sub>2</sub> + 3% sodium lauryl sulphate; Ca(OH)<sub>2</sub> + Otosporin. After 1 min, 48 and 72 h and 7 days, 147 absorbent paper cones were removed from contact with the intracanal dressings and individually transported and immersed in 5 mL of Letheen Broth, followed by incubation at 37 degrees C for 48 h. Microbial growth was evaluated by turbidity of the culture **medium**. A 0.1-mL inoculum obtained from the Letheen Broth was transferred to 5 mL of **BHI**, and incubated at 37 degrees C for 48 h. Bacterial growth was again evaluated by turbidity of the culture **medium**. Positive **BHI** tubes were selected and inocula were spread on the surface of **BHI** agar and incubated at 37 degrees C for 48 h. Gram staining of the **BHI** growth and from colonies growing on **BHI** agar was carried out. RESULTS: An antimicrobial effect occurred after 48 h on the cultures of *S. mutans*, *E. faecalis*, *S. aureus*, *P. aeruginosa*, *B. subtilis*, *C. albicans* and a mixed culture, irrespective of the intracanal dressing. CONCLUSIONS: Under the conditions of this study, the various vehicles associated with calcium hydroxide pastes did not influence the time required for microbial inactivation.

L20 ANSWER 2 OF 11 MEDLINE

2001651288 Document Number: 21562095. PubMed ID: 11705310. [In vitro utilization of fructooligosaccharide by streptococci **mutans**]. Utilizacao de frutooligosacarideo por estreptococos **mutans** in vitro. Linardi M M; Rosa O P; Buzalaf M A; Torres S A. (Departamento de Ciencias Biologicas-Faculdade de Odontologia de Bauru da USP. ) Pesqui Odontol Bras, (2001 Jan-Mar) 15 (1) 12-7. Journal code: 100941949. ISSN: 1517-7491. Pub. country: Brazil. Language: Portuguese.

- AB Neosugar is the trade name of a fructooligosaccharide (FOS) whose utilization by oral bacteria is not well known yet. The aim of the present study was to evaluate in vitro the effect of this product on the growth, fermentation and production of plaque by **mutans** streptococci: *S. mutans*, serotypes c, e and f, *S. sobrinus*, serotype d, *S. downei*, serotype h, *S. cricetus*, serotype a and *S. rattus*, serotype b. The evaluation of growth was carried out in Brain Heart Infusion (**BHI**) broths containing or not sucrose and FOS and in buffered broths having glucose or FOS as carbon sources, through optical density reading in spectrophotometer after 24 hours of incubation at 37 degrees C. Thereafter the reading of pH was made in the same **media**. The plaque produced on glass sticks in **BHI** broths containing 5% sucrose or FOS was weighed and carbohydrates and proteins were assayed. The possible cariogenicity of Neosugar was confirmed, since it sustained the same growth and intensity of fermentation of sucrose in **BHI** broth for all streptococci and permitted in vitro production of plaque by some of them. The amount of plaque as well as its content of proteins and carbohydrates were smaller than those produced with sucrose, although the difference was statistically significant only for carbohydrates.

L20 ANSWER 3 OF 11 CAPLUS COPYRIGHT 2002 ACS

1995:905720 Document No. 123:296297 Dentifrices containing cetylpyridinium chloride and fatty acid diethanolamides. Muraoka, Aiichiro (Earth Chemical Co, Japan). Jpn. Kokai Tokkyo Koho JP 07215830 A2 19950815 Heisei, 5 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1994-43013 19940203.

- AB Dentifrices contg. cetylpyridinium chloride (I) and fatty acid

diethanolamides are claimed. Dentifrices contg. I and polyethylene glycol fatty acid monoesters with av. d.p. of ethylene oxide 30-55 and/or polyoxyethylene hydrogenated castor oil with av. d.p. of ethylene oxide 90-120 are also claimed. The above specific surfactants do not lower the antibacterial activity of I. A test soln. (1 L) contg. I 0.5 g, glycerin 50 g, NaH<sub>2</sub>PO<sub>4</sub>·2H<sub>2</sub>O 800 mg, Na<sub>2</sub>HPO<sub>4</sub>·12H<sub>2</sub>O 400 mg, saccharin Na 30 mg, NaF 220 g, and MYS-40 [II, polyoxyethylene (40) monostearate] 2 g was prepd. A suspension of *Streptococcus mutans* was added to 400 .mu.L of the test soln. and 100 .mu.L of the mixt. was dild. with SCDLP medium, mixed with BHI agar medium, solidified in a Petri dish, and then incubated at 36.degree. for 48 h. Inhibition degree of II to antibacterial activity of I [log(Bs/Bcpc) where Bs is cell no. 10 s after treatment of the test soln. with the cell suspension and Bcpc is cell no. 10 s after treatment of a II-free soln. with the cell suspension] was 0.97, vs. 3.75 for MYS-25 [polyoxyethylene(25) monostearate]. A mouthwash contg. I and II was also formulated.

L20 ANSWER 4 OF 11 CAPLUS COPYRIGHT 2002 ACS

1993:598607 Document No. 119:198607 Bactericidal effect of the helium-neon laser irradiation mediated by crystal violet and trypan blue on *Streptococcus mutans*. Nishikata, Junichi (Sch. Dent., Nihon Univ., Tokyo, 101, Japan). Nippon Shishubyo Gakkai Kaishi, 35(1), 48-53 (Japanese) 1993. CODEN: NSKADI. ISSN: 0385-0110.

AB An investigation was conducted to det. the bactericidal effects of He-Ne laser irradsn. on *S. mutans* PS 14. Dyes (crystal violet and trypan blue) were added to brain heart infusion (BHI) agar medium, soft agar and hard agar at various concns. A He-Ne laser was used and operated at a power output of 10 mW. Bactericidal effects were detd. by the formation of a growth inhibition zone on the agar plates. The laser irradsn. was done 0.5 cm distant from the surface of a 15 mL BHI agar plate contg. the above dyes. The *S. mutans* strain was cultured overnight in BHI broth. After irradsn., 2.5 mL of soft agar contg. 0.5 mL of the above bacterial suspension was poured on the agar plates and then the plates were incubated aerobically at 37.degree. for 24 h. As growth inhibition was not obsd. under the above conditions, the bactericidal effect remained for only a short time after laser irradsn. In the other expt. coupled with BHI agar, soft agar and hard agar (each of which contained crystal violet or trypan blue), the bactericidal effects were clearly obsd. under all of the exptl. conditions when crystal violet was used, but not in the presence of trypan blue. These results suggest that the bactericidal effect of He-Ne laser irradsn. might be related to excitation of the crystal violet mol., and that the photodynamic effect of the dye kills the *S. mutans* cells.

L20 ANSWER 5 OF 11 CAPLUS COPYRIGHT 2002 ACS

1993:45725 Document No. 118:45725 Manufacture of antibody to *Streptococcus mutans* for dental caries control. Fukami, Sunao; Shimizu, Mikio; Sato, Shizuo (National Federation of Agricultural Co-Operative Assoc., Japan). Jpn. Kokai Tokkyo Koho JP 04273828 A2 19920930 Heisei, 8 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1991-117065 19910227.

AB Serum type-C *S. mutans* is cultured in BHI medium and the supernatant is used as antigen for injection into mice to produce an antibody useful for dental caries control. Alternatively, the antibody is manufd. by injection of antigen into chicken and isolation of the antibody from egg yolks. *S. mutans* is responsible for dental caries.

L20 ANSWER 6 OF 11 SCISEARCH COPYRIGHT 2002 ISI (R)

92:198133 The Genuine Article (R) Number: HK343. BACTERIOCIN-LIKE ACTIVITY OF BACTEROIDES-FRAGILIS GROUP ISOLATED FROM MARMOSETS. FARIAS L M; CARVALHO M A R (Reprint); DAMASCENO C A V; CISALPINO E O; VIEIRA E C. UNIV FED MINAS GERAIS, INST CIENCIAS BIOL, DEPT MICROBIOL, MICROBIOL ORAL &

ANAEROBIOS LAB, CP 2486, BR-30161 BELO HORIZONTE, MG, BRAZIL. RESEARCH IN MICROBIOLOGY (FEB 1992) Vol. 143, No. 2, pp. 151-159. ISSN: 0923-2508. Pub. country: BRAZIL. Language: ENGLISH.

\*ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS\*

- AB The ability of strains of the *B. fragilis* group, isolated from the oral cavity and intestine of marmosets, to produce bacteriorin-like substances in solid **medium**, in terms of auto-, iso- and heteroantagonism, was evaluated. Antagonistic activity was exhibited by 52 % of the intestinal strains, 3 of which showed autoantagonistic activity. Three out of 9 oral strains isolated, tested against themselves, showed simultaneous isoantagonism to 4 indicator strains; but not autoantagonism. The same 9 oral strains, when tested against 16 reference strains, revealed interspecific activity only against 2 Gram-positive microorganisms. Higher activity, evaluated by the size of the inhibition halo, was observed in **BHI-S** agar, and greatest inhibition was obtained after 72 h of incubation.

L20 ANSWER 7 OF 11 MEDLINE

92252837 Document Number: 92252837. PubMed ID: 2135610. Initial-plaque forming ability of glucosyltransferases from *Streptococcus mutans* serotype C strain. Hiroi T. (Department of Operative Dentistry, Nihon University School of Dentistry at Matsudo. ) NICHIDAI KOKO KAGAKU, (1990 Jun) 16 (2) 196-211. Journal code: 9425106. ISSN: 0385-0145. Pub. country: Japan. Language: Japanese.

- AB In order to clarify functional roles of extracellular glucosyltransferases (GTases) from *S. mutans* serotype c in initial stage of plaque formation, GTase-I and GTase-S were purified from culture fluids of strain PS 14. And an ability of these GTases to enhance cellular attachment of oral streptococci was investigated using 3H labeled resting cells of *S. sanguis* Challis and *S. milleri* Is 57. The results were as follows: 1) From culture fluids of strain PS 14 grown in a M 4 **medium** supplemented with 1% ammonium sulfate, GTase-I was purified by ammonium sulfate fractionation, CM-cellulose column chromatography and Toyopearl HW-55 gel filtration. Also, GTase-S was purified by the method of Baba et al from the culture fluids of strain PS 14 grown in a dialyzed **BHI medium**. Purified GTase-I and GTase-S were almost homogeneous, and had a molecular size of 160 KDa and 145 KDa respectively (by SDS-PAGE). 2) Sucrose-dependent attachment of *S. sanguis* cells to experimental pellicles was markedly enhanced by the addition of crude GTase in saliva. This fact was conformed by a scanning electron microscopic observation of the attachment cells. Such enhanced attachment necessitated a long-term incubation (greater than 10 h) of the cells in the presence of sucrose, suggesting that it is correlated to de novo glucan synthesis. 3) Purified GTase-I also had an ability to enhance the cellular attachment of *S. sanguis* cells as well as crude GTase, while purified GTase-S didn't have. Neither crude enzyme, GTase-I nor GTase-S have an ability to enhance significantly the cellular attachment of *S. milleri* cells. However, *S. milleri* pretreated with the preparations containing GTase-S gained the ability to attach to experimental pellicles prepared from saliva supplemented with GTase-I. These results suggest that the cellular attachment system mediated by enzymatic action (s) of GTase (s) from serotype c *S. mutans* be present and function in the first stage of plaque formation.

L20 ANSWER 8 OF 11 MEDLINE

DUPLICATE 2

89334329 Document Number: 89334329. PubMed ID: 2757369. Aggregation of 27 oral bacteria by human whole saliva. Influence of culture **medium**, calcium, and bacterial cell concentration, and interference by autoaggregation. Koop H M; Valentijn-Benz M; Nieuw Amerongen A V; Roukema P A; De Graaff J. (Dept. of Oral Biochemistry, Academic Center for Dentistry Amsterdam (ACTA), Vrije Universiteit, The Netherlands. ) ANTONIE VAN LEEUWENHOEK, (1989 Mar) 55 (3) 277-90. Journal code: 0372625. ISSN: 0003-6072. Pub. country: Netherlands. Language: English.

AB Twenty-seven oral strains of the genera *Actinomyces* (5), *Bacteroides* (3), and *Streptococcus* (19) were tested for aggregation by human whole saliva, as well as the effect of culture **medium**, Ca-ions, and bacteria concentration thereupon. Of the **media** tested, GF-broth gave rise to less interference by autoaggregation or higher aggregation titers than **BHI** and TSB, and was used throughout this study. In most cases, Ca-ions (1 mM) only enhanced the rate of induced aggregation, whereas raising the bacteria concentration increased the rate of both induced- and autoaggregation. The final titers, ranging from 1-64, were hardly affected by these parameters, except those of *S. rattus* HG 59 and *S. mutans* HG 199, which were respectively increased and decreased by Ca-ions. Saliva-induced aggregation was observed for 21 strains of *A. viscosus*, *A. naeslundii*, *A. israelii*, *B. gingivalis*, *B. intermedius*, *S. cricetus*, *S. mutans*, *S. rattus*, *S. sanguis*, and *S. sobrinus*, mostly within 15 min to 3 h. Seventeen of these strains also showed autoaggregation, usually well after the onset of induced aggregation. Any potential induced aggregation of *B. gingivalis* HG 91 was always masked by autoaggregation, as well as that of the *S. mutans* strains under a particular set of conditions. The aggregation rate and titer varied considerably in a mutually unrelated and strain-dependent way. These microtiterplate data were matched by the 5 spectrophotometric patterns observed for saliva-bacterial interaction, which moreover, gave the better differentiation between induced and autoaggregation. In conclusion, most strains tested can show rapid saliva-induced aggregation in a strain-dependent way, yet strongly affected by the experimental conditions and interference from autoaggregation.

L20 ANSWER 9 OF 11 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.DUPLICATE 3

1988:8612 Document No.: BA85:8612. PRODUCTION AND PHYSICOCHEMICAL PROPERTIES OF WATER-INSOLUBLE GLUCAN FROM STREPTOCOCCUS-MUTANS. MASUMOTO K; YAMASHITA K; YOSHIDA A; HAYASHI S; MACHIDA Y; NAGAI T. APPLICATION DEV. DIV., ROHTO PHARMACEUTICAL CO. LTD., TATSUMI NISHI-1-8-1, IKUNO-KU, OSAKA 544, JPN.. CHEM PHARM BULL (TOKYO), (1987) 35 (9), 3813-3821. CODEN: CPBTAL. ISSN: 0009-2363. Language: English.

AB A method for the production of water-insoluble glucan was developed by utilizing the extracellular glucosyltransferase present in the culture fluid of *Streptococcus mutans*, and some physicochemical properties of the glucan powder were investigated. *Streptococcus mutans* was cultured in brain heart infusion (**BHI**) **medium**. The growth phase shifted to the logarithmic phase and the stationary phase at 6 and 14h after the inoculation of the preculture into **BHI medium**, respectively. The doubling time was about 180 min. Water-insoluble glucan was produced by incubation of the cell-free supernatant of the culture fluid with sucrose added as a substrate. The amount of water-insoluble glucan produced was affected by the concentration of substrate, temperature and pH; the optimum values of these factors were 15% (w/w), 37.degree. C and 7.5, respectively. By gas-liquid chromatographic analysis of the methylated water-insoluble glucan, the glucan chain was found to consist of 60% of .alpha.-1,3- and 20% of .alpha.-1,6-D-glucosidic bonds. The molar percent of each type of linkage was not affected by the pH of the reaction mixture but was affected by the incubation temperature. Among 8 strains examined, OMZ-176 and 6715 showed the best production of water-insoluble glucan. No peak was observed in the powder X-ray diffraction pattern of the freeze-dried glucan, suggesting that it is an amorphous powder. The hygroscopicity of the glucan powder was similar to that of corn starch. A rheological study showed that a dispersion of the glucan had non-Newtonian and shear-thinning behavior.

L20 ANSWER 10 OF 11 MEDLINE DUPLICATE 4

84162913 Document Number: 84162913. PubMed ID: 6584469. Factors involved in artificial caries induction by oral streptococci in extracted human

teeth. Kaufman H W; Pollock J J; Murphy J; Lunardi S; Vlack J. JOURNAL OF DENTAL RESEARCH, (1984 May) 63 (5) 653-7. Journal code: 0354343. ISSN: 0022-0345. Pub. country: United States. Language: English.

AB This study assesses the abilities of *S. mutans* GS5 and BHT and *S. sanguis* G9B to produce subsurface lesions on smooth surfaces of extracted human teeth and examines factors which might be responsible for any differences encountered. Teeth were incubated in Brain Heart Infusion broth containing 2% sucrose and a pure culture of the organism to be tested, the media being changed each day for eight days. Surface and media pH's were measured. The mineral content of both the surface enamel and the subsurface lesions was determined by contact microradiography. Significantly deeper and more demineralized lesions were produced by GS5 than by either BHT or G9B. GS5 also produced a lower surface and medium pH and a more dense coating on the teeth. Similar results were obtained with GS5 and G9B when the BHI broth was replaced with FMC synthetic media. It is concluded that the system described is suitable for studying cariogenic potential and will be useful in measuring the anticariogenicity of suspected therapeutic agents.

L20 ANSWER 11 OF 11 MEDLINE

77070613 Document Number: 77070613. PubMed ID: 1002299. Interaction of inflammatory cells and oral microorganisms. II. Modulation of rabbit polymorphonuclear leukocyte hydrolase release by polysaccharides in response to *Streptococcus mutans* and *Streptococcus sanguis*. McArthur W P; Taichman N S. INFECTION AND IMMUNITY, (1976 Dec) 14 (6) 1309-14. Journal code: 0246127. ISSN: 0019-9567. Pub. country: United States. Language: English.

AB The release of lysosomal hydrolases from polymorphonuclear leukocytes (PMNs) has been postulated in the pathogenesis of tissue injury in periodontal disease. In the present study, lysosomal enzyme release was monitored from rabbit peritoneal exudate PMNs exposed to *Streptococcus mutans* or *Streptococcus sanguis*. *S. mutans* grown in brain heart infusion (BHI) broth failed to promote significant PMN enzyme release. *S. sanguis* grown in BHI broth, although more effective than *S. mutans*, was a weak stimulus for promotion of PMN hydrolase release. Preincubation of washed, viable *S. mutans* in sucrose or in different-molecular-weight dextrans resulted in the ability of the organisms to provoke PMN release reactions. This effect could not be demonstrated with boiled or trypsinized *S. mutans* or with viable *S. sanguis*. However, when grown in BHI broth supplemented with sucrose, but not with glucose, both *S. mutans* and *S. sanguis* triggered discharge of PMN enzymes. The mechanism(s) whereby dextran or sucrose modulates PMN-bacterial interaction may in some manner be related to promotion of microbial adhesiveness or aggregation by dextran and by bacterial synthesis of glucans from sucrose.

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FILE 'MEDLINE, EMBASE, BIOSIS, SCISEARCH, CAPLUS' ENTERED AT 16:18:21 ON 22 OCT 2002

L1 1425 S IMMUNOGLOBULIN Y OR IGY  
L2 33 S L1 AND STREPTOCOCCUS MUTANS  
L3 0 S L2 AND TYPE C  
L4 20 DUP REMOVE L2 (13 DUPLICATES REMOVED)  
L5 22587 S STREPTOCOCCUS MUTANS  
L6 4868 S L5 AND DENTAL CARIES  
L7 13 S L6 AND TYPE C  
L8 4 S L7 AND TYPE D  
L9 0 S L8 AND 2:1 RATIO

L10 13 DUP REMOVE L7 (0 DUPLICATES REMOVED)  
 L11 4 DUP REMOVE L8 (0 DUPLICATES REMOVED)  
 L12 0 S STREPTOCOCCUS MUTANT TYPE C CULTURE  
 L13 0 S STREPTOCOCCUS MUTANS TYPE C AND "BHI"  
 L14 0 S STREPTOCOCCUS CULTURE MEDIUM  
 L15 2074995 S MEDIUM  
 L16 800 S L15 AND BHI  
 L17 0 S L16 AND STREP MUTANTS  
 L18 15 S L16 AND MUTANS  
 L19 0 S L18 AND STREP  
 L20 11 DUP REMOVE L18 (4 DUPLICATES REMOVED)

=> s l15 and TTY  
 L21 15 L15 AND TTY

=> s l21 and mutans  
 L22 5 L21 AND MUTANS

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 PROCESSING COMPLETED FOR L22  
 L23 2 DUP REMOVE L22 (3 DUPLICATES REMOVED)

=> d l23 1-2 cbib abs

L23 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2002 ACS  
 1990:135235 Document No. 112:135235 Cell-associated glucosyltransferase of  
 Streptococcus **mutans**, an antibody thereto, and a dental caries  
 prophylactic composition containing said antibody. Horikoshi, Toshio;  
 Hiraoka, Junichiro; Fujita, Isamu; Tokoro, Tohru; Kodama, Yoshikatsu;  
 Yokoyama, Hideaki (Kanebo, Ltd., Japan; Ghen Corp.). Eur. Pat. Appl. EP  
 334467 A2 19890927, 21 pp. DESIGNATED STATES: R: BE, CH, DE, FR, GB, IT,  
 LI, NL. (English). CODEN: EPXXDW. APPLICATION: EP 1989-300488 19890119.  
 PRIORITY: JP 1988-10853 19880122.

AB Cell-assocd. glucosyltransferase (I) of *S. mutans* with a mol.  
 wt. of 150-165 daltons (detd. by SDS-PAGE) and other defined physicochem.  
 properties is isolated and used to prep. antibody in hens. A dental  
 caries prophylactic compn. contg. the antibody is also disclosed. The  
 cells of *S. mutans* MT8148 harvested from an 8-L culture in **TTY**  
**medium** were subjected to extn. of I. Antibody to I was prepd.  
 from egg yolks of hens immunized with the purified I. A dental caries  
 prophylactic compn. contg. 0.5 wt.% antibody soln. (having a titer 8.4  
 .times. 103) and other compatible ingredients as well as its activity on  
 inhibiting *S. mutans* from adhering onto a smooth surface (e.g. glass)  
 were disclosed.

L23 ANSWER 2 OF 2 MEDLINE DUPLICATE 1  
 78217340 Document Number: 78217340. PubMed ID: 669814. Effect of sucrose  
 in culture **media** on the location of glucosyltransferase of  
 Streptococcus **mutans** and cell adherence to glass surfaces.  
 Hamada S; Torii M. INFECTION AND IMMUNITY, (1978 Jun) 20 (3) 592-9.  
 Journal code: 0246127. ISSN: 0019-9567. Pub. country: United States.  
 Language: English.

AB Streptococcus **mutans** strain B13 (serotype D) almost exclusively  
 produced free glucosyltransferase (GTase) in the culture supernatant when  
 grown in sucrose-free **TTY** broth **medium**, which was  
 composed of Trypticase (Baltimore Biological Laboratory [BBL]  
 Cockeysville, Md.), tryptose (Difco Laboratories, Detroit, Mich.), yeast  
 extract (BBL), salts, and 1% glucose. Organisms grown in sucrose-free  
**TTY** broth retained very weak cell-associated GTase activity and  
 did not adhere significantly to glass surfaces in the presence of  
 exogenous sucrose. If sucrose was added to **TTY** broth, however,  
 GTase was found on the cell surface where cell-bound, water-insoluble  
 glucans were synthesized. Most commercially available products of

Todd-Hewitt broth were found to contain trace amounts of sucrose, as did Trypticase soy broth (BBL), whereas brain heart infusion broth (Difco and BBL) was found to be essentially free of sucrose. Almost all detectable GTase activity was cell associated when *S. mutans* B13 was grown in Todd-Hewitt or trypticase soy broth. Heat-treated B13 cells grown in Todd-Hewitt broth and cell-free, water-insoluble glucans bound free GTase and produced marked adherence in the presence of sucrose. Experiments strongly suggest that the binding sites for free GTase are the surface glucans, and cell-associated and extracellular GTases are most likely alternate states of the same enzyme protein.

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FILE 'MEDLINE, EMBASE, BIOSIS, SCISEARCH, CAPLUS' ENTERED AT 16:18:21 ON 22 OCT 2002

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L1      1425 S IMMUNOGLOBULIN Y OR IGY
L2      33 S L1 AND STREPTOCOCCUS MUTANS
L3      0 S L2 AND TYPE C
L4      20 DUP REMOVE L2 (13 DUPLICATES REMOVED)
L5      22587 S STREPTOCOCCUS MUTANS
L6      4868 S L5 AND DENTAL CARIES
L7      13 S L6 AND TYPE C
L8      4 S L7 AND TYPE D
L9      0 S L8 AND 2:1 RATIO
L10     13 DUP REMOVE L7 (0 DUPLICATES REMOVED)
L11     4 DUP REMOVE L8 (0 DUPLICATES REMOVED)
L12     0 S STREPTOCOCCUS MUTANT TYPE C CULTURE
L13     0 S STREPTOCOCCUS MUTANS TYPE C AND "BHI"
L14     0 S STREPTOCOCCUS CULTURE MEDIUM
L15     2074995 S MEDIUM
L16     800 S L15 AND BHI
L17     0 S L16 AND STREP MUTANTS
L18     15 S L16 AND MUTANS
L19     0 S L18 AND STREP
L20     11 DUP REMOVE L18 (4 DUPLICATES REMOVED)
L21     15 S L15 AND TTY
L22     5 S L21 AND MUTANS
L23     2 DUP REMOVE L22 (3 DUPLICATES REMOVED)
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=> s dental caries

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L24     44422 DENTAL CARIES
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=> s l24 and preventive

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L25     3074 L24 AND PREVENTIVE
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=> s l25 and IgY

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L26     0 L25 AND IGY
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=> s l24 and IgY

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L27     23 L24 AND IGY
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PROCESSING COMPLETED FOR L27

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L28     14 DUP REMOVE L27 (9 DUPLICATES REMOVED)
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=> d l28 1-14 cbib abs

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L28  ANSWER 1 OF 14      MEDLINE      DUPLICATE 1
2001248116 Document Number: 21189229.   PubMed ID: 11292733.   Passive
transfer of immunoglobulin Y antibody to Streptococcus mutans glucan
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binding protein B can confer protection against experimental **dental caries**. Smith D J; King W F; Godiska R.

(Department of Immunology, The Forsyth Institute, Boston, Massachusetts 02115, USA. ) INFECTION AND IMMUNITY, (2001 May) 69 (5) 3135-42. Journal code: 0246127. ISSN: 0019-9567. Pub. country: United States. Language: English.

AB Active immunization with Streptococcus mutans glucan binding protein B (GBP-B) has been shown to induce protection against experimental **dental caries**. This protection presumably results from continuous secretion of salivary antibody to GBP-B, which inhibits accumulation of S. mutans within the oral biofilm. The purpose of this study was to explore the influence of short-term (9- or 24-day) passive oral administration of antibody to S. mutans GBP-B on the longer-term accumulation and cariogenicity of S. mutans in a rat model of **dental caries**. Preimmune chicken egg yolk immunoglobulin Y (IgY) or IgY antibody to S. mutans GBP-B was supplied in lower (experiment 1) and higher (experiment 2) concentrations in the diet and drinking water of rats for 9 (experiment 1) or 24 (experiment 2) days. During the first 3 days of IgY feeding, all animals were challenged with  $5 \times 10^6$  streptomycin-resistant S. mutans strain SJ-r organisms. Rats remained infected with S. mutans for 78 days, during which rat molars were sampled for the accumulation of S. mutans SJ-r bacteria and total streptococci. Geometric mean levels of S. mutans SJ-r accumulation on molar surfaces were significantly lower in antibody-treated rats on days 16 and 78 of experiment 2 and were lower on all but the initial (day 5) swabbing occasions in both experiments. Relative to controls, the extent of molar **dental caries** measured on day 78 was also significantly decreased. The decrease in molar caries correlated with the amount and duration of antibody administration. This is the first demonstration that passive antibody to S. mutans GBP-B can have a protective effect against cariogenic S. mutans infection and disease. Furthermore, this decrease in infection and disease did not require continuous antibody administration for the duration of the infection period. This study also indicates that antibody to components putatively involved only in cellular aggregation can have a significant effect on the incorporation of mutans streptococci in dental biofilm.

L28 ANSWER 2 OF 14 SCISEARCH COPYRIGHT 2002 ISI (R)

2001:826239 The Genuine Article (R) Number: 480HZ. Isolation of immunoglobulin in yolk (IgY) and rabbit serum immunoglobulin G (IgG) specific against bovine lactoferrin by immunoaffinity chromatography. Tu Y Y; Chen C C; Chang H M (Reprint). Natl Taiwan Univ, Grad Inst Food Sci & Technol, Taipei 106, Taiwan (Reprint); Chia Nan Coll Pharm, Dept Food Hlth, Tainan 717, Taiwan. FOOD RESEARCH INTERNATIONAL (OCT 2001) Vol. 34, No. 9, pp. 783-789. Publisher: ELSEVIER SCIENCE BV. PO BOX 211, 1000 AE AMSTERDAM, NETHERLANDS. ISSN: 0963-9969. Pub. country: Taiwan. Language: English.

\*ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS\*

AB Hens were intramuscularly immunized and rabbits were subcutaneously immunized once every two weeks for 6 weeks using bovine lactoferrin (LF) as antigen. Antibody titers of both yolk (IgY) and rabbit serum (IgG) were as high as  $1.68 \times 10^8$  at the 6th and 8th weeks, respectively, after the initial immunization treatment. However, antibody titer against LF in yolk was  $9.4 \times 10^7$  at 16 weeks. While antibody titer of rabbit serum declined sharply to  $2.1 \times 10^7$  at the 12th week and to  $2.6 \times 10^6$  at the 13th week after the initial immunization. The purification efficiency (specific activity of purified antibody against LF/specific activity of the corresponding antiserum or yolk against LF) of rabbit serum IgG purified by laboratory-prepared LF-Sepharose 4B immunoaffinity column (0.05 mg LF/ml wet gel) was about 2400, similar to that of IgY purified by LF-Sepharose 4B immunoaffinity column. Different amounts (0-15.0 mg) of IgY purified by LF-Sepharose 4B immunoaffinity chromatography were applied to the same column to determine

the binding capacity (q(m)) and dissociation constant (Kd) of LF-Sepharose 4B immunoaffinity gel for IgY specific against LF. It was found that q(m) was 0.81 mg IgY/ml wet gel (1.620 mg IgY/mg LF) and K-d was  $6.4 \times 10^{-6}$  M as determined by Langmuir-type adsorption isotherms. (C) 2001 Elsevier Science Ltd. All rights reserved.

L28 ANSWER 3 OF 14 SCISEARCH COPYRIGHT 2002 ISI (R)

2001:41278 The Genuine Article (R) Number: 388KG. Randomized, placebo-controlled, clinical trial of hyperimmunized chicken egg yolk immunoglobulin in children with rotavirus diarrhea. Sarker S A (Reprint); Casswall T H; Juneja Y R; Hoq E; Hossain I; Fuchs G J; Hammarstrom L. Ctr Hlth & Populat Res, ICDDRDB, Div Clin Sci, Dhaka 1212, Bangladesh (Reprint); Huddinge Univ Hosp, Karolinska Inst, Dept Immunol Microbiol Pathol & Infect Dis, Stockholm, Sweden; Huddinge Univ Hosp, Karolinska Inst, Dept Clin Sci, Div Pediat, Stockholm, Sweden; Taiyo Kagaku Co Ltd, Nutr Foods Div, Yokkaichi, Japan. JOURNAL OF PEDIATRIC GASTROENTEROLOGY AND NUTRITION (JAN 2001) Vol. 32, No. 1, pp. 19-25. Publisher: LIPPINCOTT WILLIAMS & WILKINS. 530 WALNUT ST, PHILADELPHIA, PA 19106-3621 USA. ISSN: 0277-2116. Pub. country: Bangladesh; Sweden; Japan. Language: English. \*ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS\*

AB Background: Hyperimmunized bovine colostrum containing antibodies has been shown to be effective in the treatment of rotavirus diarrhea. Antibodies derived from eggs of immunized hens may be a less expensive and more practical alternative. In this study, children with proven rotavirus diarrhea were treated with immunoglobulin extracted from eggs of chicken immunized with human rotavirus strains.

Methods: In a randomized, double-blind study, 79 children with known rotavirus diarrhea were assigned to receive either 10 g hyperimmune egg yolk (HEY) daily in four equally divided doses for 4 days (HEY group) or a similar preparation obtained from nonimmunized chicken (placebo group). The daily stool frequency and amount, oral rehydration solution (ORS) intake, and presence of rotavirus in the stool were monitored for 4 days.

Results: In the HEY-treated group. there was significant reduction in stool output (in grams per kilogram per day; HEY vs. placebo;  $87 \pm 59$  vs.  $120 \pm 75$ ,  $P = 0.03$ ), and significant reduction of ORS intake (in milliliters per kilogram per day) (HEY vs. placebo;  $84 \pm 46$  vs.  $122 \pm 72$ ,  $P = 0.008$ ) on day 1 and clearance of virus on day 4 (HEY vs. placebo; 73% vs. 36%,  $P = 0.02$ ). There was, however, no difference in diarrheal duration between the groups.

Conclusions: Treatment with HEY against four human rotavirus strains resulted in modest improvement of diarrhea associated with earlier clearance of rotavirus from stools. These results indicate an encouraging role of HEY in the treatment of rotavirus-induced diarrhea in children. Further studies are needed to optimize the dose and neutralization titer and thus improve the efficacy of egg yolk immunoglobulin IgY derived from immunized hens.

L28 ANSWER 4 OF 14 SCISEARCH COPYRIGHT 2002 ISI (R)

2000:314123 The Genuine Article (R) Number: 3052T. Isolation of immunoglobulin from egg yolk by anionic polysaccharides. Chang H M (Reprint); Lu T C; Chen C C; Tu Y Y; Hwang J Y. NATL TAIWAN UNIV, GRAD INST FOOD SCI & TECHNOL, TAIPEI 106, TAIWAN (Reprint); CHIA NAN COLL PHARM, DEPT FOOD HLTH, TAINAN 717, TAIWAN; CHUNG HWA INST TECHNOL, DEPT FOOD NUTR, TAINAN 717, TAIWAN. JOURNAL OF AGRICULTURAL AND FOOD CHEMISTRY (APR 2000) Vol. 48, No. 4, pp. 995-999. Publisher: AMER CHEMICAL SOC. 1155 16TH ST, NW, WASHINGTON, DC 20036. ISSN: 0021-8561. Pub. country: TAIWAN. Language: English.

\*ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS\*

AB Isolation conditions of immunoglobulin in egg yolk (IgY) were optimized by the addition of various levels of Na-alginate (Alg), lambda-carrageenan (lambda-Cg), Na-carboxymethyl cellulose (CMC), and pectin (PC) to 6-fold diluted yolk. The mixtures were then reacted at pH 4.0-6.0 for 30 min. The optimal isolation conditions of IgY for

Alg, lambda-Cg, and CMC were at the 0.1% level and at pH 5.0, while those for PC were at the 0.15% level and at the same pH. The remaining lipid and remaining protein in the supernatants thus obtained was 0.5-3.8% and 10-17%, respectively, and more than 90% of lipoproteins were precipitated. The **IgY** recovery was determined to be 33-74% by means of single radial immunodiffusion method when **IgY** was isolated under the optimal conditions. PC showed the best recovery of **IgY**, while lambda-Cg provided the least. The interactions between polysaccharides and lipoproteins were mainly ionic bonds, hydrophobic interactions, and hydrogen bonds as determined by the addition (0-2.0 M) of NaSCN or urea to the polysaccharide-lipoprotein precipitates.

L28 ANSWER 5 OF 14 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.DUPLICATE  
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1999:88966 Document No.: PREV199900088966. Productivity and some properties of immunoglobulin specific against Streptococcus mutans serotype c in chicken egg yolk (**IgY**. Chang, Hung Min (1); Ou-Yang, Ray Feng; Chen, Yu Tang; Chen, Chao Cheng. (1) Grad. Inst. Food Sci. Technol., Natl. Taiwan Univ., Taipei 106 Taiwan. Journal of Agricultural and Food Chemistry, (Jan., 1999) Vol. 47, No. 1, pp. 61-66. ISSN: 0021-8561. Language: English.

AB Hens were immunized on thighs by using whole cells of Streptococcus mutans MT8148 serotype c strain as antigen through intramuscular (im) and subcutaneous (sc) routes to investigate the difference of immunization reactions and the changes in yolk antibody activities against antigen after initial immunization. Several properties of crude **IgY** were examined to evaluate the stability during food processing. Results showed that the specificity of **IgY** of im treated hens was nearly 10 times as high as those of sc treated antibody. **IgY** from the hens immunized with the serotype c strain showed significant cross-reactions against serotypes e and f, while minor reactions against serotypes a, b, d, and g were observed. In thermal stability tests, **IgY** activity in both yolk and crude **IgY** decreased with the increasing temperature, from 70 to 80degree C, but the thermal denaturation rates between those two samples were not significantly different. The addition of high levels sucrose, maltose, glycerol, or 2% glycine displayed effective protection against thermal denaturation of **IgY**. Lyophilized yolk-5% gum arabic powder showed better stability against proteases.

L28 ANSWER 6 OF 14 CAPLUS COPYRIGHT 2002 ACS

1999:816680 Document No. 132:333764 Immunized eggs : immune food for 21st century. Hatta, Hajime (Dept. of Home Economics, Kyoto Women's College, Japan). Food Style 21, 3(12), 53-55 (Japanese) 1999. CODEN: FSTYFF. Publisher: Shokuhin Kagaku Shinbunsha.

AB A review with 8 refs. on characteristic and application of poultry egg yolk, in which specified Ig, esp. **IgY** is generated, for passive immunization for prevention of rotavirus diarrhea, **dental caries**, etc.

L28 ANSWER 7 OF 14 CAPLUS COPYRIGHT 2002 ACS

1999:426415 Document No. 131:183483 Egg yolk antibodies: prevention of infectious disease using **IgY**. Hatta, Hajime (Japan). Kyoto Joshi Daigaku Shokumotsu Gakkaishi, 53, 1-11 (Japanese) 1998. CODEN: KJDSB7. ISSN: 0289-3827. Publisher: Kyoto Joshi Daigaku Shokumotsu Gakkai.

AB A review with 25 refs. The IgG found in blood serum of hen is known to transfer to yolk of egg laid by the hen to give acquired immunity to the offspring. The antibody in egg yolk has been referred to as **IgY**. A tremendous no. of hens are being systematically immunized with several antigens (vaccination) to protect the hens from infectious diseases, and managed to lay eggs as scheduled for com. transaction. Hen eggs, therefore, are now considered to be a potential source of a

large-scale prodn. of antibody (**IgY**). An important application of **IgY** is for passive immunization therapy in which the specific binding ability to the antigens (pathogens, venoms, etc.) serves to neutralize the biol. activities of those antigens. Passive immunization seems to be one of the most valuable application of antibody in which pathogen-specific **IgY** is administered to individuals to result in prevention from infectious diseases. Passive immunization tests using **IgY** is order to prevent rotavirus diarrhea, **dental caries**, and fish disease are discussed. The antigen-specific **IgY** was prepd. in an industrial scale from eggs laid by the hens immunized with selected antigens. Therefore, eating antibodies (**IgY**) will be practical for prevention of infectious diseases.

L28 ANSWER 8 OF 14 MEDLINE DUPLICATE 3  
 97341640 Document Number: 97341640. PubMed ID: 9197932. Passive immunization against dental plaque formation in humans: effect of a mouth rinse containing egg yolk antibodies (**IgY**) specific to Streptococcus mutans. Hatta H; Tsuda K; Ozeki M; Kim M; Yamamoto T; Otake S; Hirasawa M; Katz J; Childers N K; Michalek S M. (Taiyo Kagaku Co., Ltd., Central Research Laboratories, Mie, Japan. ) CRIES RESEARCH, (1997) 31 (4) 268-74. Journal code: 0103374. ISSN: 0008-6568. Pub. country: Switzerland. Language: English.

AB Passive immunization involving the delivery of antibodies specific to pathogens of infectious diseases to the host has been an attractive approach to establish protective immunity against a variety of microbial pathogens, including Streptococcus mutans, which is the principal etiologic agent of **dental caries** in humans. The overall purpose of the present study was to determine the effectiveness of a mouth rinse containing antibodies to S. mutans in preventing the establishment of this bacterium in dental plaque of humans. The antibodies were derived from egg yolks obtained from hens immunized with whole cells of S. mutans grown in sucrose-containing medium. The immunoglobulin derived from the yolks (**IgY**) of immunized hens was characterized in vitro and in vivo in human volunteers. Cross-reactivity tests showed that immune **IgY** reacted with every serotype, except serotype b, which had lost its GTase activity, when the bacteria were cultured in sucrose-containing medium. Immune **IgY** inhibited S. mutans adherence to saliva-coated hydroxyapatite discs by 59.2%, while control **IgY** caused an inhibition of only 8.2%. In the short-term (4-hour) test using a mouth rinse containing 10% sucrose, immune **IgY** decreased the ratio of the percentage of S. mutans per total streptococci in saliva. In the long-term (7-day) test using a mouth rinse without sucrose, the ratio in saliva was not significantly reduced in the volunteers using the immune **IgY** due to the large standard deviation. However, comparing the ratios of the percentage of S. mutans per total streptococci in plaque of individual subjects, there was a tendency for a reduction of the ratios in the volunteers receiving the mouth rinse containing immune **IgY**. These results support the effectiveness of **IgY** with specificity to S. mutans grown in the presence of sucrose as an efficient method to control the colonization of mutans streptococci in the oral cavity of humans.

L28 ANSWER 9 OF 14 SCISEARCH COPYRIGHT 2002 ISI (R)  
 96:909405 The Genuine Article (R) Number: VW074. Avian vitelline antibodies in diagnosis and research.. Gross M (Reprint); Speck J. UNIV GOTTINGEN, TIERARZTLICHES INST, GRONER LANDSTR 2, D-37073 GOTTINGEN, GERMANY (Reprint). DEUTSCHE TIERARZTLICHE WOCHENSCHRIFT (OCT 1996) Vol. 103, No. 10, pp. 417-422. Publisher: M H SCHAPER GMBH CO KG. POSTFACH 16 42 16 52 KALANDSTRASSE 4, W-3220 ALFELD, GERMANY. ISSN: 0341-6593. Pub. country: GERMANY. Language: German.

\*ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS\*  
 AB Hens were immunized with bacterial polysaccharide (alginate), Hepatitis B surface antigen (HBsAS), and potato viruses (PVA, PVS, PVM, PVX, and

PVY). The antibodies were isolated noninvasively from the yolks of laid eggs.

The purified yolk immunoglobulins (**IgY**) were tested in an array of various assays and diagnostic techniques. The methods employed were precipitation reactions, immun-electrophoresis, ELISA (after biotinylation of **IgY**), immuno-gold electron microscopy, and western and immune blotting. Some of these methods had to be modified according to the special requirements of avian antibodies. The special handling of this animal system is described in regard to antibody production. The results demonstrate that **IgY** derived from hens can replace IgG produced by traditional methods in mammals. The advantages of this alternate animal system are emphasized in respect to animal care, high productivity, and special suitability of avian antibodies for certain diagnostic purposes.

L28 ANSWER 10 OF 14 CAPLUS COPYRIGHT 2002 ACS

1995:128049 Document No. 122:16899 Production of egg yolk antibody (**IgY**) and its use. Hatta, Hajime; Akachi, Sigemitsu; Kim, Mujo (Cent. Res. Lab., Taiyo Kagaku Co., Ltd., Yokkaichi, 510, Japan). Nippon Nogei Kagaku Kaishi, 68(10), 1457-62 (Japanese) 1994. CODEN: NNKKA. ISSN: 0002-1407.

AB A review, with 41 refs., on antibody transfer from a parent bird to chicken, prodn. of specific antibodies in egg, difference between **IgY** and IgG, methods for mass prodn. of **IgY**, esp. on purifn., use of **IgY** for prevention of human rotavirus-induced diarrhea, Edwardsiella tarda infection of cultivated eel, **dental caries**, etc., and industrial significance of **IgY**.

L28 ANSWER 11 OF 14 SCISEARCH COPYRIGHT 2002 ISI (R)

94:601923 The Genuine Article (R) Number: PG294. EGG-YOLK ANTIBODY (**IgY**) STABILITY IN AQUEOUS-SOLUTION WITH HIGH SUGAR CONCENTRATIONS. SHIMIZU M (Reprint); NAGASHIMA H; HASHIMOTO K; SUZUKI T. UNIV TOKYO, DEPT AGR CHEM, TOKYO 113, JAPAN (Reprint); SHIZUOKA IND RES INST, DIV FOOD TECHNOL, SHIZUOKA 42112, JAPAN; UNIV SHIZUOKA, SCH FOOD & NUTR SCI, SHIZUOKA 422, JAPAN. JOURNAL OF FOOD SCIENCE (JUL/AUG 1994) Vol. 59, No. 4, pp. 763. ISSN: 0022-1147. Pub. country: JAPAN. Language: ENGLISH. \*ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS\*

AB Effect of sugars on the stabilization of hen egg yolk immunoglobulin (**IgY**) under various processing conditions was investigated. By adding 30-50% (w/v) sucrose or invert sugar to an **IgY** solution heat denaturation of the **IgY** antibody at 75-80 degrees C was markedly suppressed. A high concentration of sugar was also effective to retain the **IgY** activity under acidic conditions of pH 3 or high pressure of 5,000 kg/cm(2) at 60 degrees C. Addition of high concentrations of sucrose may be a simple means to stabilize **IgY** for processing and preservation.

L28 ANSWER 12 OF 14 CAPLUS COPYRIGHT 2002 ACS

1992:254461 Document No. 116:254461 Egg containing antibody to Streptococcus mutans as prophylactics for **dental caries**. Hatta, Hajime; Kanetake, Masa; Otake, Shigeo (Taiyo Kagaku K. K., Japan). Jpn. Kokai Tokkyo Koho JP 04071465 A2 19920306 Heisei, 14 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1990-182944 19900710.

AB Chicken antibody to Streptococcus mutans is prepd. and the egg yolk contg. the antibody is used for prepg. food or beverage as prophylactics for **dental caries**. Immunization of chicken with S. mutans, detn. the antibody in the egg yolk (**IgY**), and manuf. of a variety of food such as chocolate contg. **IgY** were demonstrated. A 2-mo study on rats showed that the chocolate contg. 0.1% **IgY** reduced the caries by approx. 40%.

L28 ANSWER 13 OF 14 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.

1992:401202 Document No.: BR43:57077. PASSIVE IMMUNIZATION WITH ANTI

**STREPTOCOCCUS-SOBRINUS IGY AGAINST DENTAL**

**CARIES** IN RATS. NISHIHARA Y; HIRASAWA M; FUKUMOTO M; KUROKI T; HATTA H; OTAKE S. NIHON UNIV. SCH. DENT. MATSUDO, JPN.. JOINT MEETING OF THE 70TH GENERAL MEETING OF THE INTERNATIONAL ASSOCIATION FOR DENTAL RESEARCH (IADR), 40TH ANNUAL MEETING OF THE BRITISH DIVISION OF THE IADR, 1992 ANNUAL MEETING OF THE CONTINENTAL EUROPEAN DIVISION OF THE IADR, 8TH ANNUAL MEETING OF THE IRISH DIVISION OF THE IADR, AND THE 75TH ANNUAL MEETING OF THE SCANDINAVIAN ASSOCIATION FOR DENTAL RESEARCH, GLASGOW, SCOTLAND, UK, JULY 1-4, 1992. J DENT RES. (1992) 71 (SPEC ISSUE), 650. CODEN: JDREAF. ISSN: 0022-0345. Language: English.

- L28 ANSWER 14 OF 14 MEDLINE DUPLICATE 4  
91154516 Document Number: 91154516. PubMed ID: 1825668. Protection of rats against **dental caries** by passive immunization with hen-egg-yolk antibody (**IgY**). Otake S; Nishihara Y; Makimura M; Hatta H; Kim M; Yamamoto T; Hirasawa M. (Department of Clinical Pathology, Nihon University School of Dentistry, Chiba, Japan. ) JOURNAL OF DENTAL RESEARCH, (1991 Mar) 70 (3) 162-6. Journal code: 0354343. ISSN: 0022-0345. Pub. country: United States. Language: English.
- AB Hen-egg-yolk antibody (**IgY**) was prepared against Streptococcus mutans MT8148 serotype c that was cultivated in medium containing sucrose, and it was used in passive caries-immunity studies. Specific pathogen-free rats infected with S. mutans MT8148 (c) and fed with a cariogenic diet containing more than 2% immune yolk powder developed significantly lower caries scores than did the ones infected with the same strain and fed with a diet containing only control yolk powder obtained from non-immunized hens. Similar results were obtained in an experiment with rats infected with S. mutans JC-2 (c) strain. Rats provided a diet supplemented with 0.5% immune water-soluble protein fraction containing S. mutans-specific **IgY** and challenged with S. mutans MT8148 exhibited significantly fewer caries lesions, compared with control rats on the normal diet.

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L30 0 L29 AND STREP MUTANS

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L31 5 L29 AND IGY

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L32 ANSWER 1 OF 5 CAPLUS COPYRIGHT 2002 ACS  
2002:242626 Document No. 136:231239 Preparation of **IgY** specific to Streptococcus mutans serotype c and serotype d for use as anticariogenic agent. Yang, Rongjian (Yachen Pharmaceutical Group (Yuandong) Co., Ltd., Peop. Rep. China). Faming Zhuanli Shenqing Gongkai Shuomingshu CN 1307061 A 20010808, 6 pp. (Chinese). CODEN: CNXXEV. APPLICATION: CN 2000-101270 20000125.

AB The anticariogenic **IgY** is prepd. by immunizing hens with Streptococcus mutans serotype C and D (2:1), collecting and stirring egg yolk in dist. water (5X vol./vol.), adjusting pH to 4.5-6.5, setting at 3-5.degree.C for 20-30 h, centrifuging for 20-30 min to obtain crude **IgY**, and purifying on DEAE-Sephadex A50 chromatog. column and Sephadex G200 gel filtration column with 0.03-0.1M and 0.05-0.2 NaCl-H3PO4 buffer resp. The anticariogenic **IgY** was prepd. as mouthwash, chewing gum, and toothpaste.

L32 ANSWER 2 OF 5 CAPLUS COPYRIGHT 2002 ACS

2000:844142 Document No. 133:349137 Anti-Helicobacter pylori egg-yolk immunoglobulin and its application. Xu, Yang; Wei, Hua; Sun, Hongbin; Fu, Jinheng; Xiong, Yonghua; Chen, Hongbing; **Yang, Rongjian**; Zhong, Qingping (Zhongde Union Inst., Peop. Rep. China). Faming Zhuanli Shenqing Gongkai Shuomingshu CN 1250056 A 20000412, 5 pp. (Chinese). CODEN: CNXXEV. APPLICATION: CN 1999-117588 19990908.

AB Provided is an anti-HP **IgY** derived from egg-yolk after immunizing egg-laying hens with Helicobacter pylori prep. The anti-HP **IgY** is useful as food product or biol. health product for diagnosis, and prevention or treatment of chronic gastritis, gastric ulcer, duodenal ulcer, and gastric tumor induced by HP.

L32 ANSWER 3 OF 5 CAPLUS COPYRIGHT 2002 ACS

2000:381942 Document No. 132:346619 Anti-Pseudomonas aeruginosa immunoglobulin derived from egg-yolk and use thereof. **Yang, Rongjian**; Cao, Yong; Chen, Hongbing; Xiong, Yonghua; Zhong, Yuping; Yang, Ningsheng (Zhongde Combination Research Inst., Peop. Rep. China). Faming Zhuanli Shenqing Gongkai Shuomingshu CN 1208732 A 19990224, 7 pp. (Chinese). CODEN: CNXXEV. APPLICATION: CN 1998-116441 19980729.

AB The anti-Pseudomonas aeruginosa egg-yolk **Ig** is prep. by immunizing egg-laying hen with cultured Pseudomonas aeruginosa (antigen) derived from infected patients and purifying from egg-yolk. The anti-PA **IgY** is used for including in biol. products or health supplement for diagnosis, prevention and treatment of Pseudomonas aeruginosa infection and secondary infections.

L32 ANSWER 4 OF 5 CAPLUS COPYRIGHT 2002 ACS

2000:369447 Document No. 132:339317 Anti-ARV **IgY** for rotavirus diarrhea in infants. **Yang, Rongjian**; Zhong, Qingping; Xiong, Yonghua; Yang, Ningsheng; Chen, Hongbing (Zhongde Union Inst., Peop. Rep. China). Faming Zhuanli Shenqing Gongkai Shuomingshu CN 1201693 A 19981216, 11 pp. (Chinese). CODEN: CNXXEV. APPLICATION: CN 1998-107254 19980401.

AB Anti-ARV **IgY** for rotavirus diarrhea in infants is prep. by collecting egg yolks 10 days after injection of reovirus to chicken, extg., purifying successively with DEAE-Sephadex A50 gel column and Sephadex G-200 column, dialyzing, and by freeze-drying. The activity of the anti-ARV **IgY** is detd. by ELIAS test with rapid anti-ARV **IgY** enzyme label reagent kit.

L32 ANSWER 5 OF 5 CAPLUS COPYRIGHT 2002 ACS

1998:218011 Document No. 129:40074 hydrolysis of anti-human rotavirus **IgY** and its oral passive immunity effect to human rotavirus. Long, Zhonger; Zhong, Qingping; Zhu, Yueke; Xiong, Yonghua; Chen, Hongbing; Yang, Ningsheng; **Yang, Rongjian** (Sino-German Joint Res. Inst., Nanchang, 330047, Peop. Rep. China). Zhonghua Shiyan He Linchuang Bingduxue Zazhi, 11(4), 358-362 (Chinese) 1997. CODEN: ZSLZFS. ISSN: 1003-9279. Publisher: Weishengbu Wuhan Shengwu Zhipin Yanjiusuo.

AB Hens were immunized with human rotavirus (HRV), and the anti-HRV **IgY** was isolated and purified from their eggs daily. The resistance of anti-HRV **IgY** to hydrolysis of gastric juice and proteases in human digestive tract, the safety of **IgY** and the effectiveness of **IgY** in clin. use were obsd. as well. The results showed that anti-HRV **IgY** has a fairly good resistance to gastrointestinal proteases. The safety of using anti-HRV **IgY** was affirmed by oral administration to mice of a soln. of **IgY**. In clin. test the **IgY** has been proved to be anti-HRV and, therefore, effective against infections of infant diarrhea induced by HRV.

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COST IN U.S. DOLLARS	SINCE FILE	TOTAL
	ENTRY	SESSION
FULL ESTIMATED COST	230.83	231.04
DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE	TOTAL
	ENTRY	SESSION
CA SUBSCRIBER PRICE	-14.25	-14.25

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